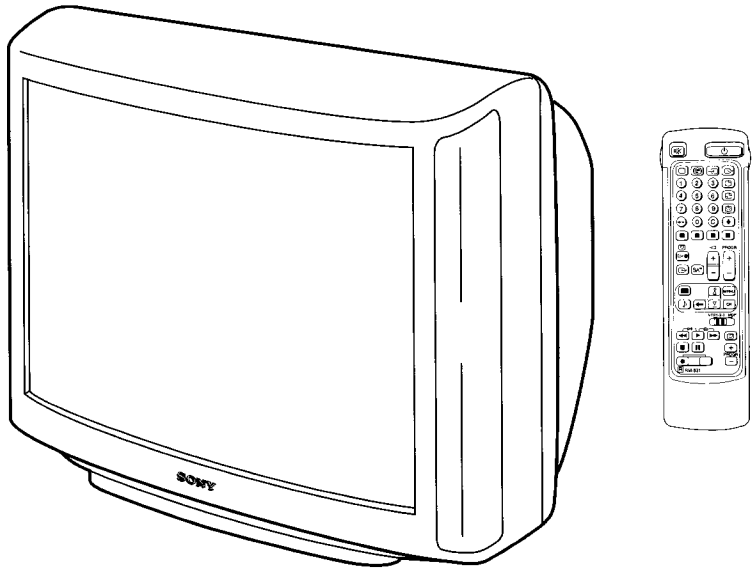
SERVICE MANUAL

AE-2F CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-S2943B	RM-831	French	SCC-G75E-A				



Super **Trinitron**

MICROFILM

TRINITRON® COLOR TV

SONY®

ITEM MODEL	Television system	Stereo system	Channel coverage	Color system
French	B/G/H,D/K L, I	GERMAN Stereo NICAM	L VHF:F02-F10 UHF:F21-F69 CABLE:B-Q B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10,U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL,SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

MODEL	French
Power consumption	146 Wh

SPECIFICATIONS

Picture tube — Super Trinitron
Approx. 72 cm (29 inches)
(Approx. 68 cm picture measured diagonally)
110° -deflection

Input/Output Terminals

[REAR]

- 1 21-pin Euro connector (CENELEC standard)
  - Inputs for audio and video signals
  - inputs for RGB
  - outputs of TV video and audio signals
- 2/S 2 21-pin Euro connector
  - inputs for audio and video signals
  - inputs for S video
  - outputs for audio and video signals (selectable)
- 4/S 4 21-pin Euro connector
  - inputs for audio and video signals
  - inputs for S video
  - outputs for audio and video signals (monitor out)
- S 2 / S 4 S video inputs
  - 4 pin DIN
- Audio inputs (L, R) -phono jacks
- S video output - 4 pin DIN
- Audio outputs - phono jacks
- Audio outputs (variable) - phono jacks

External speaker terminals : 2 pin
Woofer terminal : 2-pin

[FRONT]

- 3 Video input-phono jack
- Audio input-phono jacks
- S 3 S video input 4-pin DIN
- Headphone jack: Stereo minijack

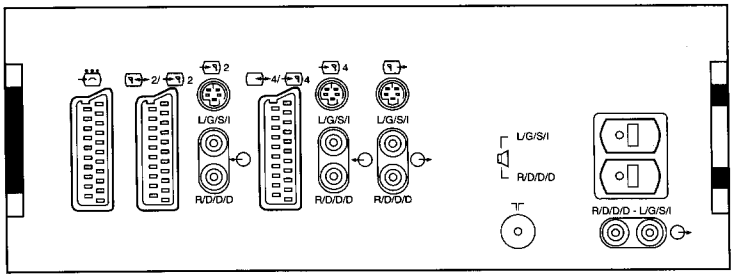
Sound output	2x15W Side Speakers (RMS) 2x35W Side Speaker (Music)
Dimensions incl.speakers	Approx. 702x558x540 mm
Weight	Approx. 53.0 kg
Supplied accessories	RM-831 Remote Commander (1) RM-860 Roller Commander (1) IEC designation R6 batteries (2)
Other features	NICAM, FASTEXT Digital comb filter (High resolution) PIP (Picture-in Picture) Roller commander DNR (Digital Noise Reduction) 100Hz TV Set Digital Surround Graphic Equalizer

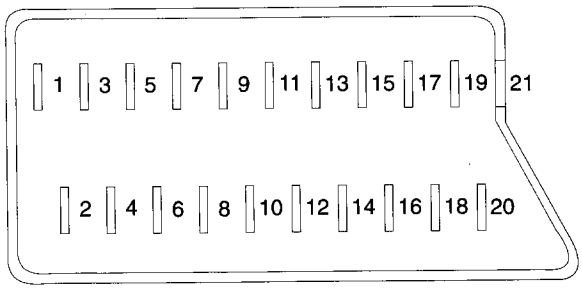
[RM-831]

Remote control system	infrared control
Power requirements	1.5V dc 1 battery IEC designation R6 (size AA)
Dimentions	Approx. 65x222x21 mm (w/h/d)
Weight	Approx. 157g (Not including Batteries)

Design and specifications are subject to change without notice.

21 pin connector (1 2 / 4)





Item \ Model name	KV-S2943B
Pal Comb	ON
PiP	ON
RGB Priority	ON
Woofer Box	OFF
NICAM	ON
Scart 1	ON
Scart 2	ON
Front in (3)	ON
Scart 4	ON
Dyn. Convergence	OFF
Projector	OFF
AKB in 16:9 mode	ON
Norm B/G	ON
Norm I	ON
Norm D/K	ON
Norm AUS	OFF
Norm L	ON
Norm SAT	OFF
Norm M	OFF
Language Preset	Francais

Pin No	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance:less than 1kohm*
2	○	○	Audio input B (right)	Standard level:0.5Vrms Input impedance:More than 10kohms*
3	○	○	Audio output A (left)	Standard level:0.5Vrms Output impedance:less than 1kohm*
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio input A (left)	Standard level:0.5Vrms Input impedance:More than 10kohms*
7	○	●	Blue input	0.7V±3dB, 75ohms, positive
8	○	○	Function select (AV control)	High state (9.5—12V):Part mode Low state (0—2V):TV mode Input impedance:More than 10kohms Input capacitance:Less than 2nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal:0.7V±3dB. 75ohms, positive
12	○	○	Open	
13	○	○	Ground(red)	
14	○	○	Ground (blanking)	
15	○	—	Red input	0.7V±3dB, 75ohms, positive
	—	○	(S signal) croma input	0.3V±3dB, 75ohms, positive
16	○	●	Blanking input (Ys signal)	High state (1—3V) Low state (0—0.4V) Input impedance:75ohms
17	○	○	Ground (video output)	
18	○	○	Ground (video input)	
19	○	○	Video output	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
20	○	—	Video input	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
	—	○	Video Input/Y (S signal)	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
21	○	○	Common ground (plug, shield)	

○ connected ● unconnected (open) * At 20 Hz—20kHz

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

WARNING !!

AN ISOLATING TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD, DUE TO A LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLIMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÈ LORS DE TOUT DÈPANNAGE. LE CHÁSSIS DE CE RÈCEPTEUR EST DIRECTEMENT RACCORDÈ Á L'ALIMENTATION SECTEUR.

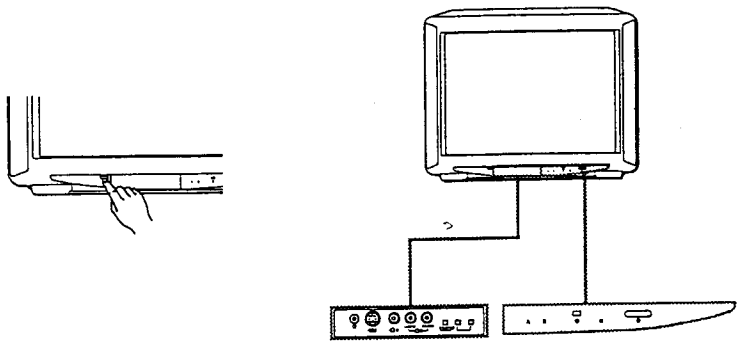
ATTENTION AUX COMPOSANTS RELATIFS Á LA SÈCURITÈ !!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÈMAS DE PRINCIPE, LES VUES EXPLOSÈES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÈCURITÈ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÈRO DE PIÈCE EST INDIQUÈ DANS LE PRÈSENT MANUEL OU DANS DES SUPPLÈMENTS PUBLIÈS PAR SONY.

Overview

This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

TV set-front

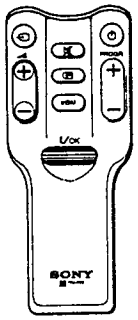


Symbol	Name	Refer to page
h	Main power switch	13
i	Standby indicator	13
A-g -B	Stereo A/B indicators	15
J	Headphones jack	23
y 3, z 3, p 3,	Input jacks (S video/video/audio)	23
P→l →z ↑——————↓	Function selector (Programme/volume/input)	13
–/+	Adjustment buttons for function selector	13

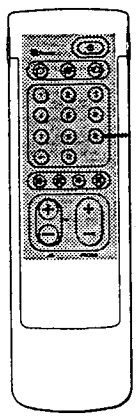
SECTION 1
GENERAL

The operating instructions mentioned here are partical abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

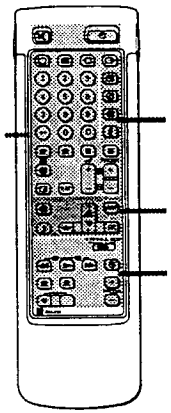
Roller Commander RM-860



Remote commander RM-831



Simple side



Full-Function side

Note
The SAT button does not operate with this TV.

TV/Teletext operation

Symbol	Name	Refer to page
u	Muting on/off button	14
i	Standby button	13
x	TV power on/TV mode selector button	13
Á	Teletext button	14
z	Input mode selector	14
h	Output mode selector	24
1,2,3,4,5,6, 7,8,9 and 0	Number buttons	13
–/--	Double-digit entering button	13
C	Direct channel entering button	12
l +/-	Volume control button	13
PROGR+/-	Programme selectors	13
q r	Teletext page access buttons	20
n	Picture adjustment button	15
ó	Sound adjustment button	15
G	On-screen display button	14
á	Teletext hold button	20
ø	Time display button	14
■■■■	Fastext buttons	20

PIP (Picture-in-Picture) operation

Symbol	Name	Refer to page
ó	PIP on/off button	18
†	PIP source selector	18
n	Swap button	18
m	PIP position changing button	18

Menu operation

Symbol	Name	Refer to page
MENU	Menu on/off button	7
o+/s–	Select buttons	7
OK	OK (confirming) button	7
←	Back button	7
y/OK	Roller Commander: Roller to select/confirm menu functions	7

Video operation

Symbol	Name	Refer to page
VTR 1/2/3, MDP	Video equipment selector	25
q q æ æ æ ■ II ● i PROGR +/-	Video equipment operation buttons	25

❸ Preset channels automatically

With this method, you can preset all receivable channels at once.

To stop automatic channel presetting
Press ← on the Remote Commander.

Notes
- After presetting the channels automatically, you can check which channels are stored on which programme positions. For details, see »Using the Programme Table« on page 17.
- You can sort the programme positions to have them appear on screen in the order you like. For details, see »Sorting Programme Positions« on page 10.

Note
Programme names are automatically taken from Teletext if available. If not, please refer to page 11 »Captioning a Station name« for more information.

1 Select »Preset/Timer« with ○ + or s – and press OK.
The PRESET/TIMER menu appears. (See Fig. 3.)

2 Select »Auto Programme« with ○ + or s – and press OK.
The AUTO PROGRAMME menu appears. (See Fig. 4.)

3 Press OK repeatedly until the first element of the »PROG« number is highlighted.

4 Select the programme (number button) from which you want to start presetting. Select the first element of the double-digit number with ○ + or s – or the number buttons (e.g. For »04«, select »0« here) and press OK.
The second element of »PROG« will be highlighted.

5 Select the second element of the double-digit number with ○ + or s – or the number buttons (e.g. For »04«, select »4« here) (See Fig. 5.) and press OK.

6 Press OK. The automatic channel presetting starts.
When presetting is finished, the preset menu reappears. All available channels are now stored on successive number buttons.

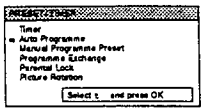


Fig. 3.

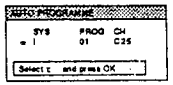


Fig. 4.

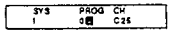


Fig. 5.

❸ Preset channels manually

Use this method if there are only a few channels in your area to preset or if you want to preset channels one by one. You may also allocate programme numbers to various video input sources.

If you have made a mistake
Press ← to go back to the previous position.
To go back to main menu
Keep pressing ←.
To go back to the normal TV picture
Press MENU.

1 Select »Preset/Timer« with ○ + or s – and press OK.
The PRESET/TIMER menu appears. (See Fig. 6.)

2 Select »Manual Programme Preset« with ○ + or s – and press OK.
The MANUAL PROGRAMME PRESET menu appears. (See Fig. 7.)

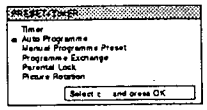
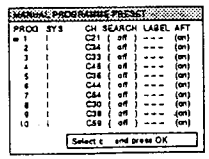


Fig. 6.


MANUAL PROGRAMME PRESET
PROG SYS CH SEARCH LABEL AFT
1 1 C21 (off) --- (off)
2 1 C34 (off) --- (off)
3 1 C33 (off) --- (off)
4 1 C38 (off) --- (off)
5 1 C35 (off) --- (off)
6 1 C44 (off) --- (off)
7 1 C34 (off) --- (off)
8 1 C30 (off) --- (off)
9 1 C29 (off) --- (off)
10 1 C49 (off) --- (off)
Select ↕ and press OK
Fig. 7.

To tune in a channel by frequency
After selecting F in step 6, enter three digits using the number buttons.

3 Using ○ + or s –, select the programme position (number button) to which you want to preset a channel, and press OK.

4 Select if necessary, a video input source (EXT) with ○ + or s –.

5 Then press OK. The CH position will be highlighted.
(See Fig. 8.)

6 Using ○ + or s –, select C (to preset a regular channel) or F (to tune in by frequency) and press OK.
The first element of the »CH« number will be highlighted.
If you have selected EXT in step 4, select the video input source with ○ + or s –. (See Fig. 9.)

There are two ways to preset channels. If you know the channel number, go to step »7-Manual«,

or

if you don't know the channel number, go to step »7-Search«.

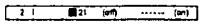


Fig. 8.

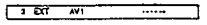


Fig. 9.

7 ***Manual***

-a Select the first element of the »CH« number with ○ + or s – or the number buttons and press OK.
The second element of the »CH« number will be highlighted.

-b Select the second element of the number with ○ + or s – or the number buttons.
The selected number appears. (See Fig. 10.)

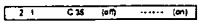


Fig. 10.

-c Press OK.
The »SEARCH« position is highlighted and the selected channel is now stored. (See Fig. 11.)

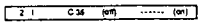


Fig. 11.

-d Press OK until the cursor appears by the next programme position.

-e Repeat steps 3 to 7 to preset other channels.

If you have made a mistake
Press ← to go back to the previous position.
To go back to main menu
Keep pressing ←.
To go back to the normal TV picture
Press MENU.

7 ***Search***

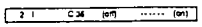


Fig. 12.

-a Press OK repeatedly until the colour of the SEARCH position changes.

-b Start searching for the channel with ○ + (up) or s – (down).
The CH position changes colour. (See Fig. 12.)
The CH number starts counting up or downwards. When a channel is found, it stops. (See Fig. 13.)

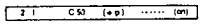


Fig. 13.

-c Press OK if you want to store this channel. If not, press ○ + or s – to continue channel searching.

-d Press OK until the cursor appears by the next programme position.

-e Repeat steps 3 to 7 to preset other channels.

❸ Preset channels automatically

With this method, you can preset all receivable channels at once.

To stop automatic channel presetting
Press ← on the Remote Commander.

Notes
- After presetting the channels automatically, you can check which channels are stored on which programme positions. For details, see »Using the Programme Table« on page 17.
- You can sort the programme positions to have them appear on screen in the order you like. For details, see »Sorting Programme Positions« on page 10.

Note
Programme names are automatically taken from Teletext if available. If not, please refer to page 11 »Captioning a Station name« for more information.

1 Select »Preset/Timer« with ○ + or s – and press OK.
The PRESET/TIMER menu appears. (See Fig. 3.)

2 Select »Auto Programme« with ○ + or s – and press OK.
The AUTO PROGRAMME menu appears. (See Fig. 4.)

3 Press OK repeatedly until the first element of the »PROG« number is highlighted.

4 Select the programme (number button) from which you want to start presetting. Select the first element of the double-digit number with ○ + or s – or the number buttons (e.g. For »04«, select »0« here) and press OK.
The second element of »PROG« will be highlighted.

5 Select the second element of the double-digit number with ○ + or s – or the number buttons (e.g. For »04«, select »4« here) (See Fig. 5.) and press OK.

6 Press OK. The automatic channel presetting starts.
When presetting is finished, the preset menu reappears. All available channels are now stored on successive number buttons.

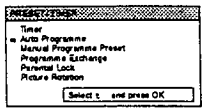


Fig. 3.

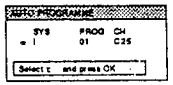


Fig. 4.

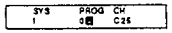


Fig. 5.

❸ Preset channels manually

Use this method if there are only a few channels in your area to preset or if you want to preset channels one by one. You may also allocate programme numbers to various video input sources.

If you have made a mistake
Press ← to go back to the previous position.
To go back to main menu
Keep pressing ←.
To go back to the normal TV picture
Press MENU.

1 Select »Preset/Timer« with ○ + or s – and press OK.
The PRESET/TIMER menu appears. (See Fig. 6.)

2 Select »Manual Programme Preset« with ○ + or s – and press OK.
The MANUAL PROGRAMME PRESET menu appears. (See Fig. 7.)

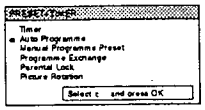


Fig. 6.

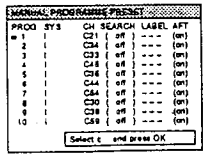


Fig. 7.

To tune in a channel by frequency
After selecting F in step 6, enter three digits using the number buttons.

3 Using ○ + or s –, select the programme position (number button) to which you want to preset a channel, and press OK.

4 Select if necessary, a video input source (EXT) with ○ + or s –.

5 Then press OK. The CH position will be highlighted.
(See Fig. 8.)

6 Using ○ + or s –, select C (to preset a regular channel) or F (to tune in by frequency) and press OK.
The first element of the »CH« number will be highlighted.
If you have selected EXT in step 4, select the video input source with ○ + or s –. (See Fig. 9.)

There are two ways to preset channels. If you know the channel number, go to step »7-Manual«,

or

if you don't know the channel number, go to step »7-Search«.

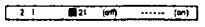


Fig. 8.

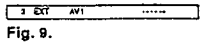


Fig. 9.

7 ***Manual***

-a Select the first element of the »CH« number with ○ + or s – or the number buttons and press OK.
The second element of the »CH« number will be highlighted.

-b Select the second element of the number with ○ + or s – or the number buttons.
The selected number appears. (See Fig. 10.)

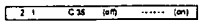


Fig. 10.

-c Press OK.
The »SEARCH« position is highlighted and the selected channel is now stored. (See Fig. 11.)

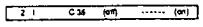


Fig. 11.

-d Press OK until the cursor appears by the next programme position.

-e Repeat steps 3 to 7 to preset other channels.

7 ***Search***

-a Press OK repeatedly until the colour of the SEARCH position changes.

-b Start searching for the channel with ○ + (up) or s – (down).
The CH position changes colour. (See Fig. 12.)
The CH number starts counting up or downwards. When a channel is found, it stops. (See Fig. 13.)

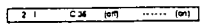


Fig. 12.

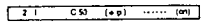
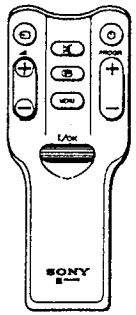


Fig. 13.

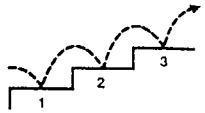
-c Press OK if you want to store this channel. If not, press ○ + or s – to continue channel searching.

-d Press OK until the cursor appears by the next programme position.

-e Repeat steps 3 to 7 to preset other channels.



Additional Presetting Functions

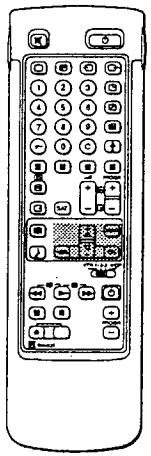


This section shows you additional presetting functions such as sorting or skipping programme positions, captioning a station name, manual fine-tuning, and using the parental lock.

Before you begin

- Check that the Full Function side of the Remote Commander is visible.
- Locate the Menu operation buttons.

PROGRAMME SORTING



Sorting Programme Positions

With this function, you can sort the programme positions to a preferable order.

1 Press MENU to display the main menu.

2 Select »Preset/Timer« with o + or s – and press OK.
The PRESET/TIMER menu appears.

3 Select »Programme Sorting« with o + or s – and press OK.
The PROGRAMME SORTING menu appears. (See Fig. 14.)

4 Using o + or s –, select the programme position which you want to move to another and press OK.
The colour of the selected position changes. (See Fig. 15.)

5 Using o + or s –, select the programme position to which you want to move the channel of the programme position selected in step 4 and press OK. Now the programme positions have been sorted. (See Fig. 16.)

6 Repeat steps 4 and 5 to sort other programme positions.

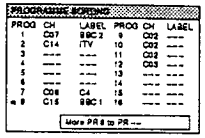


Fig. 14.

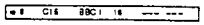


Fig. 15.

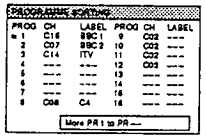


Fig. 16.

PICTURE ROTATION

For higher programme positions
The display scrolls automatically.

If you have made a mistake
Press ← to go back to the previous position.

To go back to main menu
Keep pressing ← .

To go back to the normal TV picture
Press MENU.

How to adjust the Picture Rotation

If due to the earth magnetism the picture »slants«, you can use the function »Picture Rotation« to readjust the picture.

1 Press MENU to display the main menu.

2 Select »Preset/Timer« with o + or s – and press OK.
The PRESET/TIMER menu appears.

3 Select »Picture Rotation« with o + or s – and press OK.
The PICTURE ROTATION menu appears. (See Fig. 17.)

4 Press OK. Adjust the picture rotation with o + or s – until you have an upright picture. As you press the cursor buttons, the range changes from – 2 to + 2.

5 Press OK to store the adjustment.

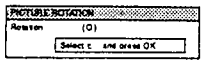


Fig. 17.

MANUAL PROGRAMME PRESET

Skipping Programme Positions

You can skip unused programme positions when selecting programmes with the PROGR +/– buttons. However, the skipped programmes may still be called up when you use the number buttons.

PROGR
+
–

1 Press MENU to display the main menu.

2 Select »Preset/Timer« with o + or s – and press OK.
The PRESET/TIMER menu appears.

3 Select »Manual Programme Preset« with o + or s – and press OK.
The MANUAL PROGRAMME PRESET menu appears.
(See Fig. 18.)

4 Using o + or s –, select the programme position which you want to skip and press OK.
The »SYS« position changes colour.

5 Press o + or s – until »– – – –« appears in the SYSTEM position.
(See Fig. 19.)

6 Press OK. (See Fig. 20.)
When you select programmes using the PROGR +/– buttons, the programme position will be skipped.

7 Repeat steps 4 to 6 to skip other programme positions.

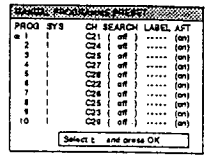


Fig. 18.

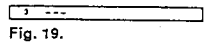


Fig. 19.

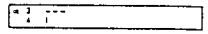


Fig. 20.

MANUAL PROGRAMME PRESET

If you have made a mistake
Press ← to go back to the previous position.

To go back to main menu
Keep pressing ← .

To go back to the normal TV picture
Press MENU.

Captioning a Station Name

Programme names are usually automatically taken from Teletext if available. You can also »name« a channel or an input video source using up to five characters (letters or numbers) to be displayed on the TV screen (e.g. BBC1). Using this function, you can easily identify which channel or video source you are watching.

1 Press MENU to display the main menu.

2 Select »Preset« with o + or s – and press OK.
The PRESET menu appears.

3 Select »Manual Programme Preset« with o + or s – and press OK.
The MANUAL PROGRAMME PRESET menu appears.
(See Fig. 21.)

4 Using o + or s –, select the programme position you want to caption and press OK repeatedly until the first element of the LABEL position is highlighted.

5 Select a letter or number with o + or s – and press OK.
The next element will be highlighted.
Select other characters in the same way. If you want to leave an element blank, select – and press OK. (See Fig. 22.)

6 After selecting all the characters, press OK repeatedly until the cursor appears by the next programme position (at the left margin). Now the caption you chose is stored. (See Fig. 23.)

7 Repeat steps 5 and 6 to caption names for other channels.

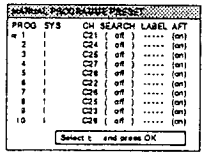


Fig. 21.

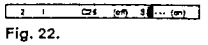


Fig. 22.

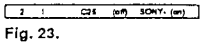


Fig. 23.

MANUAL PROGRAMME PRESET

Manual Fine-Tuning

Normally, the AFT (automatic fine-tuning) is already operating. However, if the picture is distorted, you can use the manual fine tuning function to obtain better picture reception.

1 Press MENU to display the main menu.

2 Select »Preset/Timer« with o + or s – and press OK.
The PRESET/TIMER menu appears.

3 Select »Manual Programme Preset« with o + or s – and press OK.
The MANUAL PROGRAMME PRESET menu appears.
(See Fig. 24.)

4 Using o + or s –, select the programme position corresponding to the channel which you want to manually fine-tune, and press OK repeatedly until the AFT position changes colour.

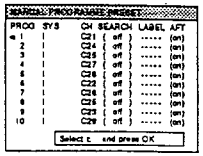


Fig. 24.

To reactivate AFT (automatic fine tuning)
Repeat from the beginning and select »ON« in step 5.

5 Fine-tune the channel with o + or s – so that you get the best TV reception. As you press the cursor buttons, the frequency changes from – 15 to + 15. (See Fig. 25.)

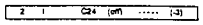


Fig. 25.

6 After fine tuning, press OK.
The cursor appears beside the next programme position (at the left margin). (See Fig. 26.) Now the fine-tuned level is stored.

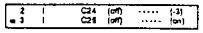


Fig. 26.

7 Repeat steps 4 to 6 to fine-tune other channels.

PARENTAL LOCK

Parental Lock

You can prevent undesirable broadcasts from appearing on the screen. We suggest you use this function to prevent children from watching programmes which you consider unsuitable.

1 Press MENU to display the main menu.

2 Select »Preset« with o + or s – and press OK.
The PRESET menu appears.

3 Select »Parental Lock« with o + or s – and press OK.
The PARENTAL LOCK menu appears. (See Fig. 27.)

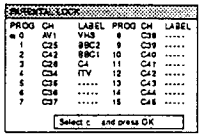


Fig. 27.

4 Using o + or s –, select the programme position you want to block and press OK.
The CH and LABEL change colour indicating that this programme is now blocked. (See Fig. 28.)

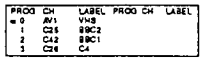


Fig. 28.

5 Repeat step 4 to block other programme positions.

If you try to select a programme that has been blocked
The message »LOCKED« appears on the blank TV screen.

Cancelling blocking

1 On the PARENTAL LOCK menu, select the programme position you want to unblock with o + or s –.

2 Press OK.
The CH and LABEL change colour to normal colour indicating that the blocking has been cancelled.

Tuning in a Channel Temporarily

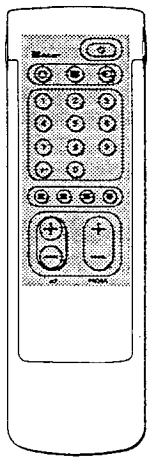
You can tune in a channel temporarily, even when it has not been preset. Use the buttons on the Full-Function side of the Remote Commander.

1 Press C on the Remote Commander.
The indication »C« appears on the screen.

2 Enter the double-digit channel number using the number buttons (e.g. for channel 4, first press 0, then 4).
The channel appears.
However, the channel will not be stored.

Operating Instructions

Watching the TV



If no picture appears when you depress h on the TV
and if the standby indicator on the TV is lit, the TV is in standby mode. Press x or one of the number buttons to switch it on.

This section explains the basic functions you use while watching TV. Most of the operations can be done using the simple side of the Remote Commander.

Switching the TV on and off

Switching on

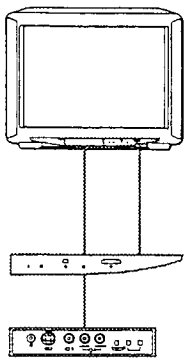
Depress h on the TV.

Switching off temporarily

Press i on the Remote Commander.
The TV enters standby mode and the standby indicator on the front of the TV lights up.
To switch on again
Press x , PROGR +/–, or one of the number buttons on the Remote Commander.

Switching off completely

Depress h on the TV.



Selecting TV Programmes

Press PROGR +/- or press number buttons.

To select a double-digit number

Press -/- -, then the numbers.
For example, if you want to choose 23, press -/- -, 2 and 3.

Adjusting the Volume

Press l +/–.

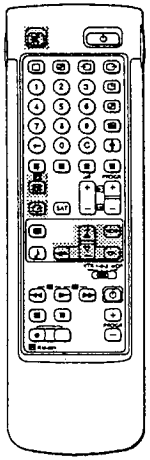
Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can select programmes, adjust the volume, and select video input sources.

- Press P→l →z button repeatedly until the programme number, l (for volume), or z (for video input picture) appears. Then adjust with the –/+ buttons.
- Press –/+ buttons to switch on the TV from the standby mode.
- Press –/+ simultaneously to reset picture and sound controls to the factory preset level (RESET function).

For details of the teletext operation, refer to page 20.

For details of the video input picture, refer to page 24.



To make the Programme Table disappear
Press MENU.

Watching Teletext or Video Input

Watching teletext

- Press A to view the teletext.
- Press three number buttons to select a page.
- Press one of the coloured buttons for fastext operation.
- Press q (PAGE +) or r (PAGE –) for the next or preceeding page.
- To go back to the normal TV picture, press x .

Watching a video input picture

Press z repeatedly until the desired video input appears. To go back to the normal TV picture, press x .

More Convenient Functions

Use the Full-Function side of the Remote Commander.

Displaying the on screen indications

- Press G once to display all the indications. They will disappear after some seconds.
  Press G twice to have the programme number and label stay on screen. Press twice again to make indications disappear.

Muting the sound

- Press u .
  To resume normal sound, press u again.

Displaying the time

- Press x . This function is available only when teletext is broadcast.
  To make the time display disappear, press x again.

Displaying of the Programme Table

Press OK. A Programme Table will be displayed on the right side of the TV screen (See. Fig. 29.)

Selecting of TV programmes
Press PROGR +/– or select the desired programme position using o + or s – and press OK.

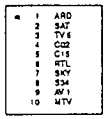
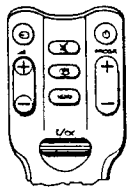
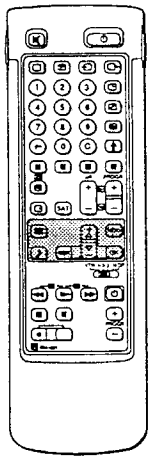


Fig. 29.



PICTURE CONTROL
SOUND CONTROL



If you have made a mistake
Press ← to go back to the previous position.

To go back to the main menu
Keep pressing ← .

To go back to the normal TV picture
Press MENU.

Note:
HUE is only available for NTSC colour system and RESOLUTION does not work for SECAM colour system.

Note on LINE OUT
The audio level and the dual sound mode output from the Ł jack on the rear correspond to the Headphone VOLUME and DUAL SOUND settings.

When watching video input picture
You can select DUAL SOUND to change the sound.

Adjusting and Setting the TV Using the Menu

Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste. In addition, you can set the resolution to obtain a higher quality picture or reduce the picture noise. You can also select dual sound (bilingual) programmes when available, adjust the sound for listening with the headphones (J) or individually adjust and store the volume level of each channel (Volume offset). Also you have the possibility to adjust the sound to your individual taste using the Graphic Equalizer and special Sound effects.

1 Press n (for picture) or Ö (for sound) on the Remote Commander.
  or
  Press MENU and select »Picture Control« or »Sound Control«, then press OK.
  The PICTURE CONTROL or SOUND CONTROL menu appears. (See Fig. 29 or Fig. 30.)

2 Using o + or s –; select the item you want to adjust and press OK. The selected item changes colour. (See Fig. 31.)

3 Adjust the setting with o + or s – and press OK.
  The cursor appears beside the next item (at the left margin). (See Fig. 32.)
  For the effect of each control, see the table below.

4 Repeat steps 2 and 3 to adjust other items.

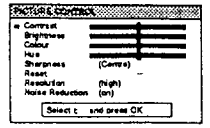


Fig. 30.

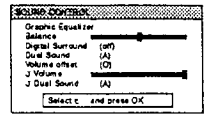


Fig. 31.

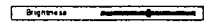


Fig. 32.

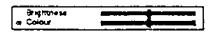


Fig. 33.

Effect of each control

PICTURE CONTROL	Effect
Contrast	Less —+— More
Brightness	Darker —+— Brighter
Colour	Less —+— More
Hue	Greenish —+— Reddish
Sharpness	Min. – Centre – Max.
Reset	Resets picture to the factory preset levels
Resolution	off: Normal High: Obtain a higher picture quality
Noise Reduction	off: Normal on: Reduction of picture noise in case of weak signals

SOUND CONTROL	Effect
Graphic Equalizer	(See page 16 for more information)
Balance	More left —+— More right
Digital Surround	off: Normal Choice between special sound effects: Dome, Hall, Arena, Simulated (gives width to a monaural source)
Dual Sound	A: left channel B: right channel stereo mono The selected mode of The A-g -B indicator on the TV lights up (for NICAM broadcasts see next page)
Volume offset	– 4 Less 0 More + 4
Headphones:	
J Volume	Less —+— More
J Dual Sound	A: left channel B: right channel stereo mono

Graphic Equalizer

Using this function you can individually adjust the sound by cutting and boosting selected frequencies. You can also select between the following modes:
Flat → Pop → Rock → Jazz → Vocal → User

Note:
The modifications made in »User« will be stored. All other settings are reset to the factory-set level when you change to another mode.

1. Select »Sound control« in the Main Menu, then select »Graphic equalizer« using o + or s – and press OK.
2. Press OK. The colour of »Mode« changes. (See Fig. 34.) Select the desired mode with o + or s –, then press OK.
3. If you want to modify a mode, select the desired bar of a frequency band using o + or s – and press OK. The selected bar changes colour. Using o + or s – adjust the level of frequency and press OK. In this way you can adjust all 5 graphic bars.
4. Press MENU to return to the normal TV mode.

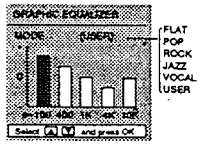


Fig. 34.

*Selecting Nicam Broadcasts**

This Sony TV has been designed to select Nicam broadcasts when available. Whenever a Nicam broadcast is received, »NICAM« appears briefly on the screen. When the Nicam programme ends, or you switch channels to one without Nicam, the A-g -B indicators, on the TV will switch off.

Nicam programmes can be broadcast in two ways. You may select the sound you want to hear in either of these by first following the instructions explained on page 15.

Service Being Broadcast	Action	Effect	Indication on the TV A-g -B
Stereo	Press	Stereo Nicam (Mono 2-Channel)	☞ ☞
	o + or s –	mono	▭ ▭
Press o + or s – again to return to stereo Nicam (mono 2-channel)			
Bilingual	press	Channel A Nicam	☞ ▭
	o + or s –	Channel B Nicam	▭ ☞
		mono	▭ ▭
Press o + or s – again to return to channel A Nicam			

* Depending on availability of service.

PROGRAMME TABLE

Using the Programme Table

On this table, you can see which channel is preset to which programme position. You can also select programmes using this table.

From the main menu, select »Programme Table« with o + or s – and press OK.
The PROGRAMME TABLE menu appears. (See Fig. 35.)

To scroll to higher programme numbers, press o + or s –.

To select a programme using this menu
Select the programme number with o + or s – and press OK.
The selected programme appears.

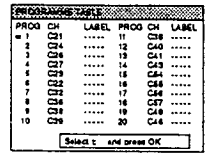


Fig. 35.

TIMER

To go back to the normal TV picture
Press MENU.

To switch off the timer
Select »OFF« in step 3.

To check the remaining time
Press G .

Using the Sleep Timer

You can select a time period after which the TV automatically switches into standby mode.

1 From the main menu, select »Preset/Timer« with o + or s – and press OK.
The PRESET/TIMER menu appears.

2 Using o + or s – select »Timer« and press OK.
The TIMER menu appears. (See Fig. 36.)

3 Press OK.
The time period option changes colour.

4 Select the time period with o + or s –.
The time period (in minutes) changes as follows:
10 → 20 → 30 → 40 → 50 → 60 → 70 → 80 → 90
↑ OFF ←

5 After selecting the time period, press OK.
The cursor moves back to the left margin and the timer starts counting.
One minute before the TV switches into standby mode, a message is displayed on the screen.

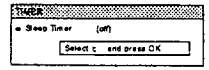
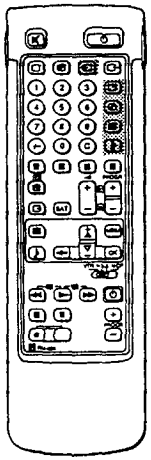


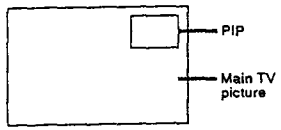
Fig. 36.

PIP (Picture-In-Picture)



Note
RGB input source cannot be displayed in PIP.

With this function you can display a »PIP screen« (small picture) within the main TV picture. In this way you can watch or monitor the video output from any connected equipment (for example from a VTR) while watching TV or vice versa. For information about connection of other equipment, refer to page 23.



Switching PIP on and off

Press ö .
The PIP screen will be displayed. The PIP picture will come from the source chosen when the TV was last used.

To switch PIP off
Press ö again.

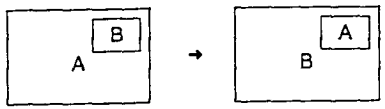
Selecting a PIP source

Press ↑.
The symbol ↑will be displayed at the bottom, left-hand corner of the screen.
Press z repeatedly until the desired source is indicated (e.g. TV, AV 1, AV 2, YC2, AV 3, YC3, AV 4, YC 4).

Note
If no video source has been connected, the PIP picture will be noisy.

Swapping screens

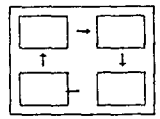
Press n .
The main screen will switch the picture with the PIP screen.

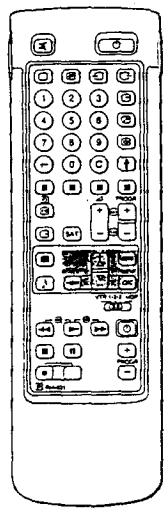


Note
If a TV programme is on the PIP screen and a video source on the main picture, and you want to change channels, first press ↑and then the programme buttons or PROGR +/-.

Changing the position of the PIP

Press m repeatedly to change the position of the PIP screen within the main screen. There are four different positions available.





Operating Screen Mode / PIP using the Menu

Using the Screen Mode / PIP Menu you have the possibility to change the aspect ratio of the TV display for wide screen effect, operate the PIP mode, scan 9 successive TV channels on the screen (Programme Catching), display 8 successive freeze pictures (Photo mode) or reproduce the main picture image by image (strobe function).

1 Press MENU to display the main menu.

2 Select »Screen mode/PIP« with Δ + or ∇ – and press OK. The SCREEN MODE/PIP menu appears. (See Fig. 37.)

a) **Changing the Format**
Using Δ + or ∇ – select »Screen mode« and press OK. The selected item changes colour. Using Δ + or ∇ – select the desired format (4 : 3 normal ratio or 16 : 9 for wide screen effect) and press OK.

b) **Switching PIP on and off**
Using Δ + or ∇ – select »PIP« and press OK. Using Δ + or ∇ – select »on« to display the PIP screen and »off« to switch it off and press OK.

c) **Changing the position of the PIP**
Using Δ + or ∇ – select »PIP position« and press OK. Using Δ + or ∇ – repeatedly to change the position of the PIP screen and press OK.

MULTI PIP functions

a) **Programme Catching**
Using Δ + or ∇ – select »Programme Catching« and press OK. Now a scan of 9 successive programmes (8 still pictures, 1 live picture where the cursor is positioned) is displayed on the TV screen starting from the programme tuned in. Using Δ + or ∇ – you can move the cursor and update the still pictures. The programme scanning starts again if you select the programme position lower or higher than the 9 displayed ones. (See Fig. 38.)

To select a Programme using the Programme Index
Using Δ + or ∇ – select the desired programme position and press OK. Now the selected programme is displayed and you are back in the normal TV mode.

b) **Photo mode**
Using Δ + or ∇ – select »Photo« and press OK. Now the main picture is displayed as a succession of 8 still pictures and a 9th picture which will be live. (See Fig. 39.) Using Δ + or ∇ – the photo mode starts again. Press OK to return to the normal TV mode.

c) **Strobe mode**
Using Δ + or ∇ – select »Strobe« and press OK. Now the TV picture is displayed image by image, which gives it the effect of slow motion. (See Fig. 40.) Using Δ + or ∇ – select the speed of the motion (3 different speeds are available). Press OK to return to normal TV mode.

(4:3)/(16:9)

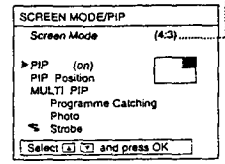


FIG 37.

[PROGRAMME CATCHING]

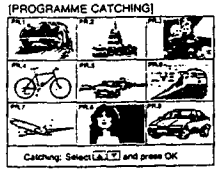


FIG 38.

[PHOTO]

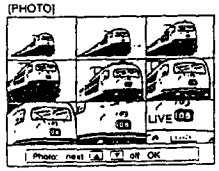


FIG 39.

[STROBE]

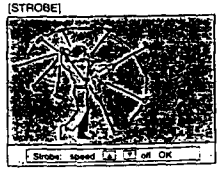
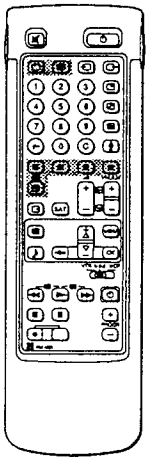


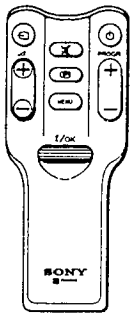
FIG 40.

Teletext



Note
Teletext errors may occur if the broadcasting signals are weak.

With the simple side of the Remote Commander
You can switch teletext on and off, operate Fastext, and directly select page numbers.



Note
Fastext operation is only possible, if the TV station broadcasts Fastext signals.

TV stations broadcast an information service called Teletext via the TV channels. Teletext service allows you to receive various information pages such as weather reports or news at any time you want. For advanced teletext operation, use the buttons on the Full-Function side of the Remote Commander.

Direct Access Functions

Switching Teletext on and off

1 Select the TV channel which carries the teletext broadcast you want to watch.

2 Press Á to switch on teletext.
A teletext page will be displayed (usually the index page).
If there is no teletext broadcast, »No text available« is displayed on the information line of the screen.

To switch teletext off
Press x .

Selecting a teletext page

With direct page selection
Use the number buttons to input the three digits of the chosen page number.
If you have made a mistake, type in any three digits. Then re-enter the correct page number.

With page-catching

1 Select a teletext page with a page overview (e.g. index page).

2 Press OK. »Page catching« will be displayed on the information line. The last digit if the first displayed page number flashes.

3 Using o + o s –, select the desired page and press OK.
The requested page will appear in a few seconds.
Press Á to resum.

Accessing next or preceding page
Press q (PAGE +) or r (PAGE -).
The next or preceding page appears.

Superimposing the teletext display on the TV programme

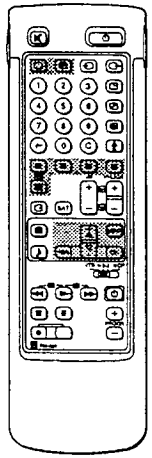
- Press Á once in teletext mode or twice in TV mode.
- Press Á again to resume normal teletext reception.

Preventing a teletext page from being updated

- Press á (HOLD). The HOLD symbol »á « displayed on the information line.
- Press Á to resume normal teletext reception.

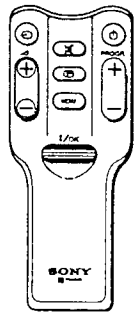
Using Fastext

With Fastext you can access pages with one key stroke.
When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons on the Remote Commander.
Press the corresponding coloured button on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed after some seconds.



Note
Some of the features may not be available depending on the Teletext service.

Note:
If you press OK again the right teletext page will appear on the left side of the TV screen.



To cancel the request
Select subpage and press OK.

Using the Teletext Menu

This TV is provided with a menu-guided teletext system. When teletext is switched in, you can use the menu buttons to operate the teletext menu. Select the teletext menu functions in the following way:

1 Press MENU. The menu will be superimposed on the teletext display. (See Fig. 41.)

2 Using o + o s –, select the teletext function you want and press OK. (See Fig. 42.)

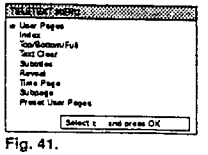


Fig. 41.

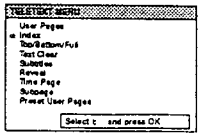


Fig. 42.

USER PAGES/PRESET USER PAGES

See page 22 for information about presetting and operating the user pages.

INDEX

The index will give you an overview of the contents of the teletext and the page numbers.

TOP/BOTTOM/FULL

For convenient reading of a teletext page, you can enlarge the teletext display with the ability to scroll up and down. After having selected the function, an information line TOP/BOTTOM/FULL will be displayed. (See Fig. 43.)

Press o + for »Top« to enlarge the upper half. Keep pressing s – for »Bottom« to enlarge the lower one. Press OK for »Full« to resume the normal size.
Press Á to resume normal teletext reception.

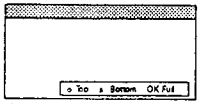


Fig. 43.

TEXT CLEAR

After having selected the function, you can watch a TV programme while waiting for a requested teletext page to be displayed. (The symbol changes colour) (See Fig. 44.)
Press Á to view the captured page.

Fig. 44.

SUBTITLES

Your teletext service will inform you if a TV programme is subtitled. After having selected the function the subtitles will be displayed.

REVEAL

Sometimes pages contain concealed information, such as answers to a quiz. The reveal option lets you disclose the information. After having selected the function, an information line »REVEAL ON/OFF« will be displayed. (See Fig. 45.)

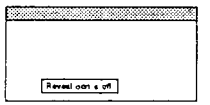


Fig. 45.

Using o + or s –, select ON to reveal the information or OFF to conceal it again.
Press Á to resume normal teletext reception.

TIME PAGE

This feature is not available in the U. K. .

SUBPAGE

You may want to select a particular teletext page from several subpages which are rotated automatically. After having selected the function, an information line will be displayed.

To select the desired subpage, enter four digits using PROGR +/– or the number buttons. (e.g. enter 0002 for the second page of a sequence).

User Page Bank System

You can store up to 30 pages in the »Teletext page bank system«. In this way you have quick access to the pages you watch frequently.

Storing pages

There are 5 »banks« (A to E) for 5 teletext stations. In each bank you can store 6 preferred pages (1P to 6P).

1 Press Á (if Teletext is not on already) and MENU to show the TELETEXT MENU display.

2 Select PRESET USER PAGES with o + or s – and press OK.

3 Select the desired bank with o + or s – and press OK. The cursor will go to the first position (P1) of the preferred pages.

4 Input the three digits of your first preferred page with the number buttons. The cursor will go to the second position.

5 Repeat step 4 for the other 5 page numbers you want to preset. If you do not want to preset all 6 page numbers available, press OK without inserting any number.

6 Select »Allocate Bank« with o + or s – and press OK.

7 Select the programme position for which you have preset pages with o + or s – and press OK. (See Fig. 46).

8 Select the desired bank with o + or s – (Banks A to E are available) and press OK.

9 Repeat steps 3 to 8 for the other 4 banks available.

If two broadcasting stations use the same Teletext
You can preset one bank to 2 different programme positions.

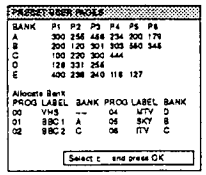

PRESET USER PAGES
BANK P1 P2 P3 P4 P5 P6
A 300 256 466 294 300 179
B 200 120 301 303 560 346
C 100 230 300 444
D 120 331 256
E 400 298 340 118 127
Allocate Bank
PROG LABEL BANK PROG LABEL BANK
03 VHS -- 04 MTV D
01 BBC1 A 05 SKY B
02 BBC2 C 06 ITV C
Select ↕ and press OK

Fig. 46.

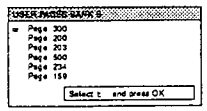


Fig. 47.

Displaying User Pages

1 Select MENU.

2 Select »USER PAGES« with o + or s – and press OK. A table of the stored preferred pages will be displayed. (See Fig. 47.)

3 Select the desired page with o + o s – and press OK. The page will be displayed after some seconds.

or

You can use the coloured buttons on the Remote Commander to have quick access to the first four User pages. Page 1 corresponds to the red button, P 2 to the green one, P 3 to the yellow one and P 4 to the blue button.
To select the desired page press the respective coloured button while you are in TV mode. Now the Page number of this teletext page will appear in white at the top in the left-handed corner of the TV screen. When the page number changes colour the page is available. Press the coloured button again to display the page.

Connecting and Operating Optional Equipment

Connecting Optional Equipment

You can connect optional audio-video equipment to this TV such as VTRs, video disc players, and stereo systems.

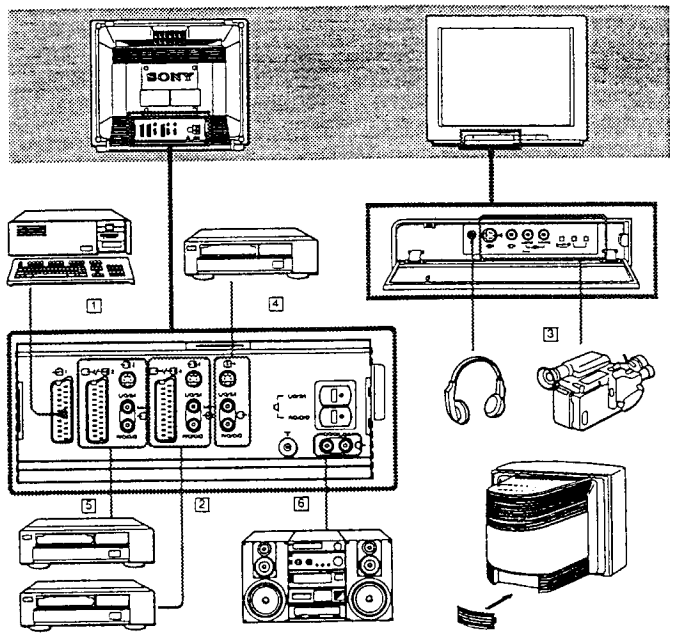
To connect a VTR using the E terminal
Connect the aerial output of the VTR to the aerial terminal E of the TV.
We recommend that you tune in the video signal to programme number »0«. For details see »Preset channels manually« on page 8.

If the picture or the sound is distorted
Move the VTR away from the TV.

Note:
After having connected all optional equipment to the TV, attach the supplied cover onto the rear panel (See illustration at the right).

S video input (Y/C input)
Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals. Separating the Y and C signals prevents them from interfering with one another, and therefore improves picture quality (especially luminance).
This TV is equipped with 3 S Video input jacks through which these separated signals can be input directly.

When connecting a monaural VTR
Connect only the white ⊃ jack to both the TV and VTR.



Acceptable input signal	Available output signal
1 Normal audio/video and RGB signal	Video/audio from TV tuner
2 Normal audio/video and S video signal	Video/audio from selected source
3 Normal audio/video and S video signal	No outputs
4 Normal audio/video and S video signal	Video/audio displayed on TV screen (monitor out)
5 No inputs	S video/audio signal displayed on TV screen (monitor out)
6 No inputs	Audio signal (variable)

User Page Bank System

You can store up to 30 pages in the »Teletext page bank system«. In this way you have quick access to the pages you watch frequently.

Storing pages

There are 5 »banks« (A to E) for 5 teletext stations. In each bank you can store 6 preferred pages (1P to 6P).

1 Press Á (if Teletext is not on already) and MENU to show the TELETEXT MENU display.

2 Select PRESET USER PAGES with o + or s – and press OK.

3 Select the desired bank with o + or s – and press OK. The cursor will go to the first position (P1) of the preferred pages.

4 Input the three digits of your first preferred page with the number buttons. The cursor will go to the second position.

5 Repeat step 4 for the other 5 page numbers you want to preset. If you do not want to preset all 6 page numbers available, press OK without inserting any number.

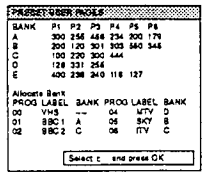
6 Select »Allocate Bank« with o + or s – and press OK.

7 Select the programme position for which you have preset pages with o + or s – and press OK. (See Fig. 46).

8 Select the desired bank with o + or s – (Banks A to E are available) and press OK.

9 Repeat steps 3 to 8 for the other 4 banks available.

If two broadcasting stations use the same Teletext
You can preset one bank to 2 different programme positions.


PRESET USER PAGES
BANK P1 P2 P3 P4 P5 P6
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C 100 230 300 444
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E 400 298 340 118 127
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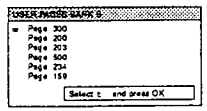
03 VHS -- 04 MTV D
01 BBC1 A 05 SKY B
02 BBC2 C 06 ITV C
Select ↕ and press OK

Fig. 46.



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1 Select MENU.

2 Select »USER PAGES« with o + or s – and press OK. A table of the stored preferred pages will be displayed. (See Fig. 47.)

3 Select the desired page with o + o s – and press OK. The page will be displayed after some seconds.

or

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Connecting and Operating Optional Equipment

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We recommend that you tune in the video signal to programme number »0«. For details see »Preset channels manually« on page 8.

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Note:
After having connected all optional equipment to the TV, attach the supplied cover onto the rear panel (See illustration at the right).

S video input (Y/C input)
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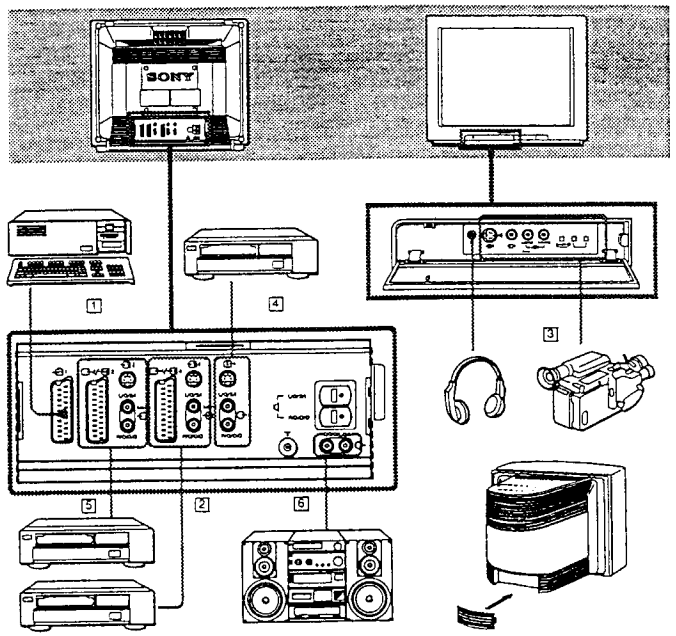
Connect only the white ⊃ jack to both the TV and VTR.

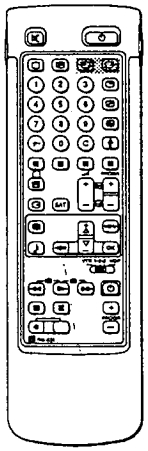


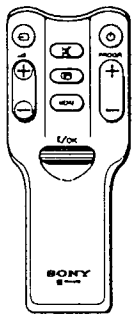
Acceptable input signal	Available output signal
1 Normal audio/video and RGB signal	Video/audio from TV tuner
2 Normal audio/video and S video signal	Video/audio from selected source
3 Normal audio/video and S video signal	No outputs
4 Normal audio/video and S video signal	Video/audio displayed on TV screen (monitor out)
5 No inputs	S video/audio signal displayed on TV screen (monitor out)
6 No inputs	Audio signal (variable)

Selecting input and output

This section explains how to view the video input picture (of the video source connected to your TV), and how to select the output signal using direct access buttons or the menu system.

Selecting input with PROGR +/- or number buttons
You can preset video input sources to the programme positions so that you can select them with PROGR +/– or number buttons. For details, see »Preset channels manually« on page 8.





Selecting input

Press z repeatedly to select the input source.
The symbol of the selected input source will appear.

z 1

To go back to the normal TV picture

Press x .

Input modes

Symbol	Input signal
z 1	Audio/video input through the e 1 connector
l	RGB input through the e 1 connector
z 2	Audio/video input through the A 2/y 2 connector
y 2	S video input through the A 2/y 2 or y 2 connector
z 3	Audio/video input through z 3 and p on the front
y 3	S video input through the y 3 connectors on the front (4-pin connector)
z 4	Audio/video input through the A 4/y 4 connector
y 4	S video input through the A 4/y 4 or y 4 connector (4-pin connector)

You can also select the input mode using the P→1 →z and –/+ buttons on the TV.

In this case, first select z , and then press –/+ buttons to select the input.

Selecting the output

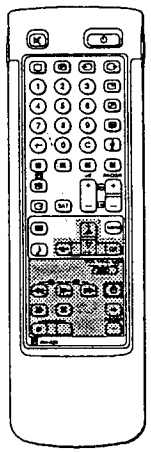
The A 2/y 2 connector outputs the source input from the other connectors.

Press h repeatedly to select the output.
The symbol of the selected output source appears.

1 h

Output modes

Symbol	A 2/y 2 connector outputs
1 h	The audio/video signal from the e 1 connector
2 h	The audio/video signal from the A 2/y 2 connector
2 Q	The audio/S video signal from the A 2/y connector
3 h	The audio/video signal from the z 3 and p 3 connectors
3 Q	The audio/S video signal from the y 3 and p 3 connectors
4 h	The audio/video signal from the A 4/y 4 connector
4 Q	The audio/S video signal from the A 4/y 4 connector
TV h	The audio/video signal from the E aerial terminal



When recording
When you use the ● (record) button, make sure to press this button and the one to the right of it simultaneously.

Checking and selecting the input and output sources using the menu

You can display the menu to see which input sources are selected for the TV screen and PIP screen, and which output source is selected. You can also select them on the menu display.

1 Select »Video Connection« with o + or s – and press OK. The VIDEO CONNECTION menu appears. (See Fig. 48).
You can see which source is selected for the TV and PIP input, and for the output. If you want to select the input and output on this menu, go on to the next step.

2 Select TV screen (input source for the TV screen), PIP (input source for the PIP screen), or Output (output source) with o + or s – and press OK. One of the source items changes colour. (See Fig. 49.)

3 Select the desired source with o + o s –. (See Fig. 50.)
For details about each source, see the table on page 23.

4 Press OK.
The selected source is confirmed, and the cursor appears. (See Fig. 51.)

5 Repeat steps 2 to 4 to select the source for other inputs or outputs.

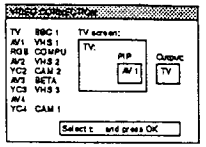


Fig. 48

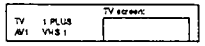


Fig. 49

Fig. 50

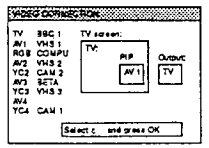


Fig. 51

Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control other remote-controlled equipment. The buttons for video operation have been factory-set to control most of Sony video equipment, such as: Beta, 8mm or VHS VTRs or video disc players.

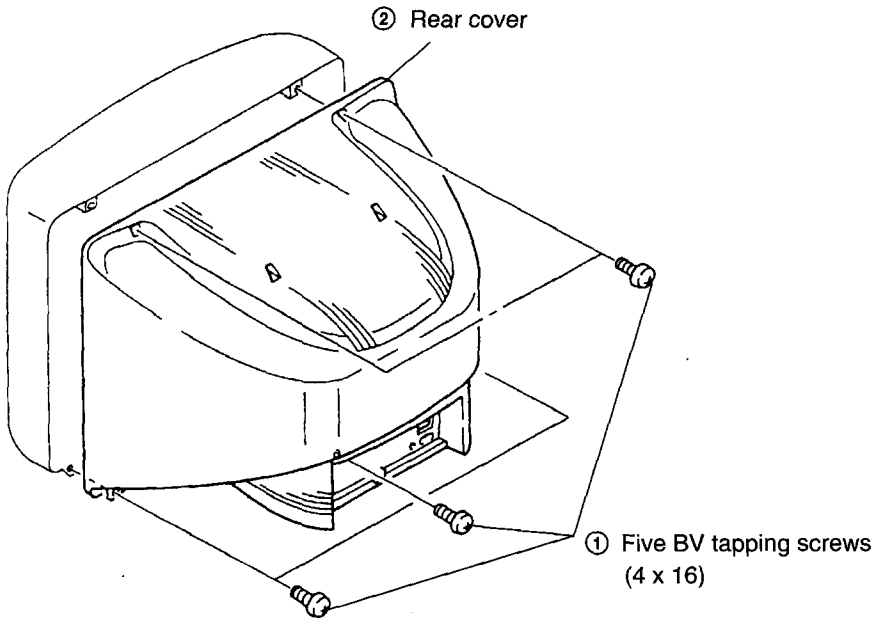
Tuning the Remote Commander to Sony equipment

1 Set the VTR 1/2/3 MDP selector according to the equipment you want to control:
VTR 1: Beta or ED Beta VTR
VTR 2: 8mm VTR
VTR 3: VHS VTR
MDP: Video disc player

2 Use the buttons indicated in the illustration to operate the additional equipment.
If your video equipment is furnished with a COMMAND MODE selector set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.
If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

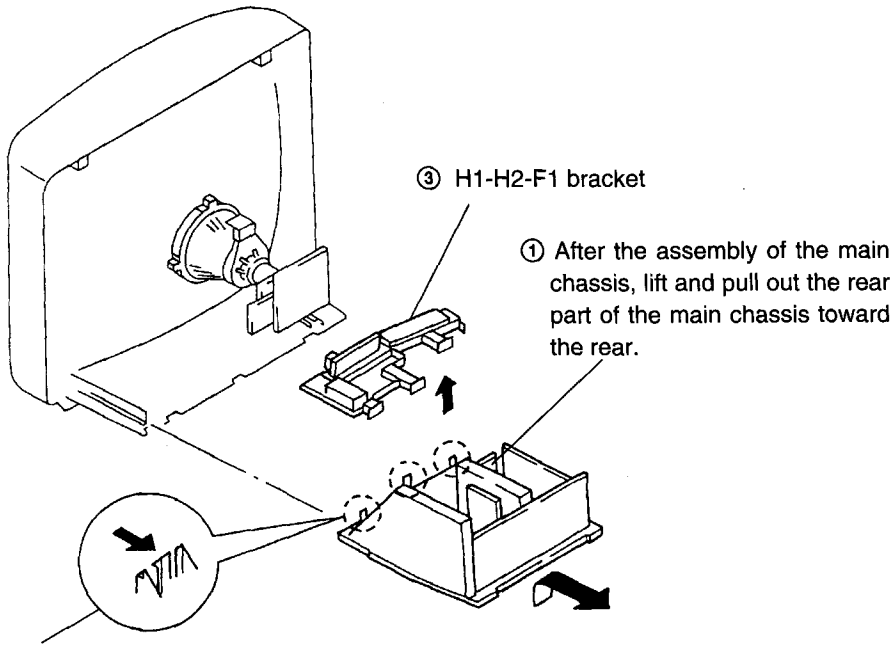
SECTION 2
DISASSEMBLY

2-1. REAR COVER REMOVAL

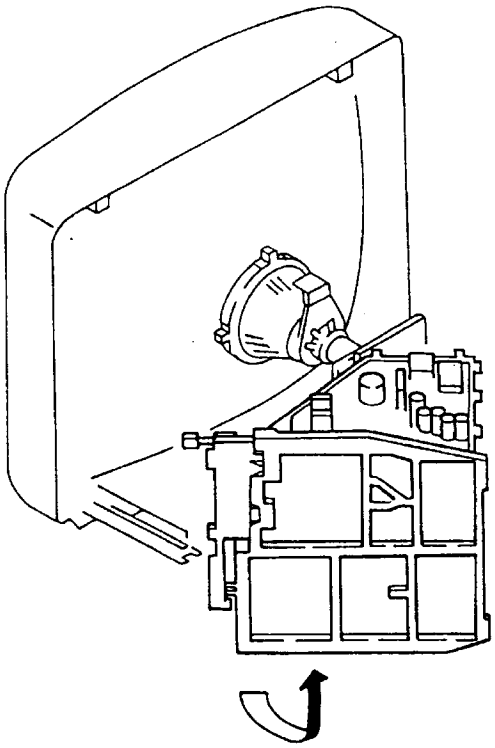


2-2. CHASSIS ASSY REMOVAL

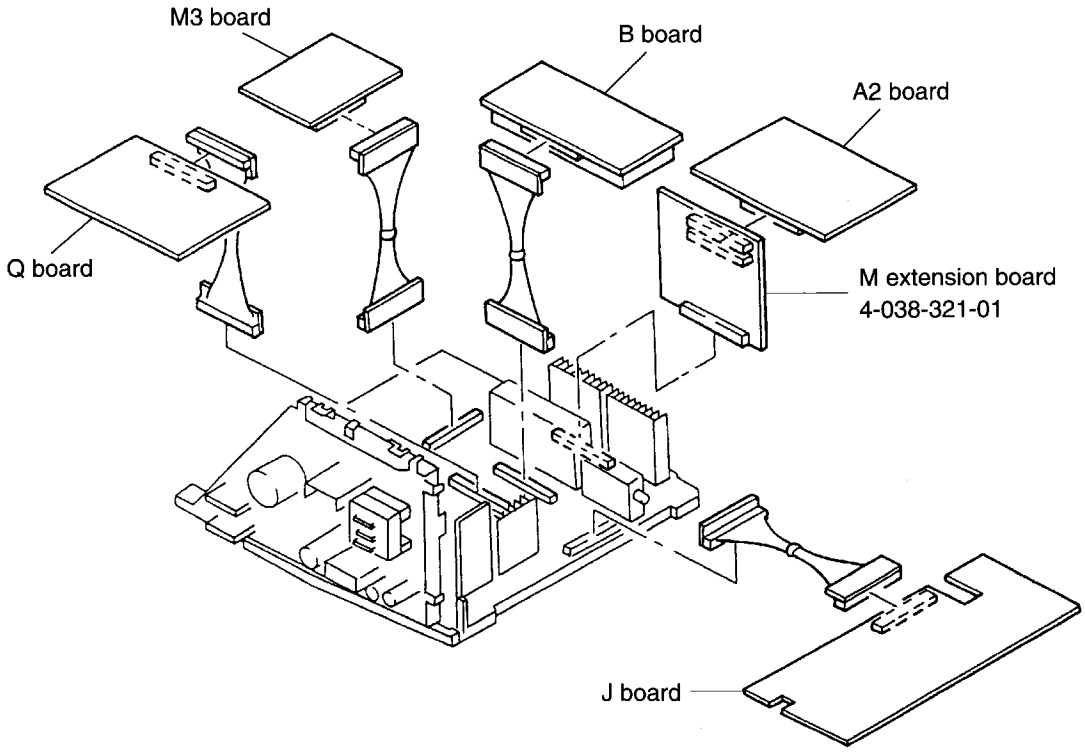
* Remove the connector bracket and then perform the following servicing.


③ H1-H2-F1 bracket
① After the assembly of the main chassis, lift and pull out the rear part of the main chassis toward the rear.
② Push the three claws of the main chassis in the direction of the arrow and remove the H1-H2-F1 bracket upwards.

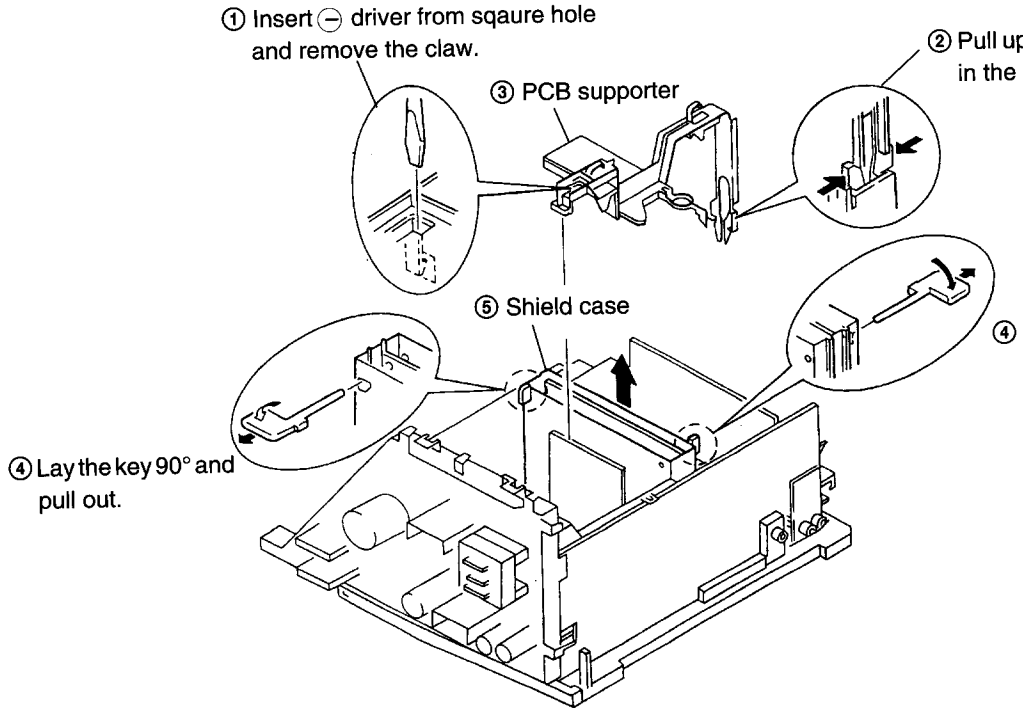
2-3. SERVICE POSITION



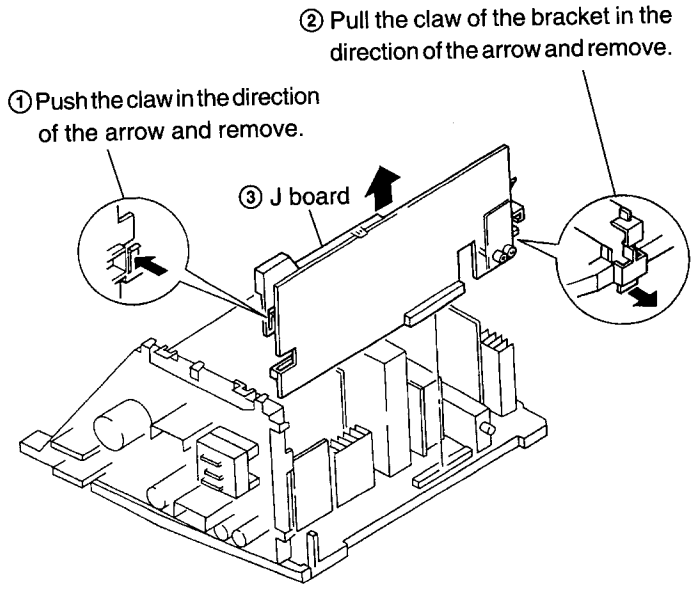
2-4. EXTENSION BOARD



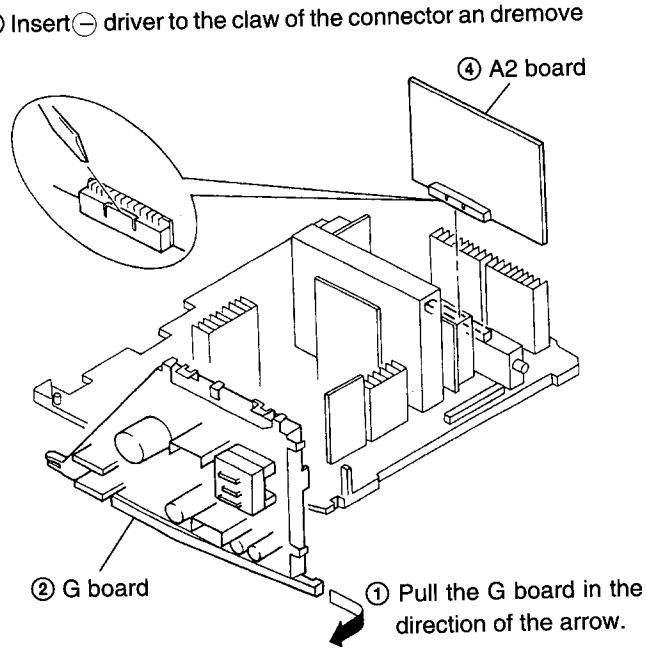
2-5. PCB SUPPORTER AND SHIELD CASE REMOVAL


① Insert ⊖ driver from sqaure hole and remove the claw.
② Pull up while pushing both sides in the direction of the arrow.
③ PCB supporter
⑤ Shield case
④
④ Lay the key 90° and pull out.

2-6. J BOARD REMOVAL

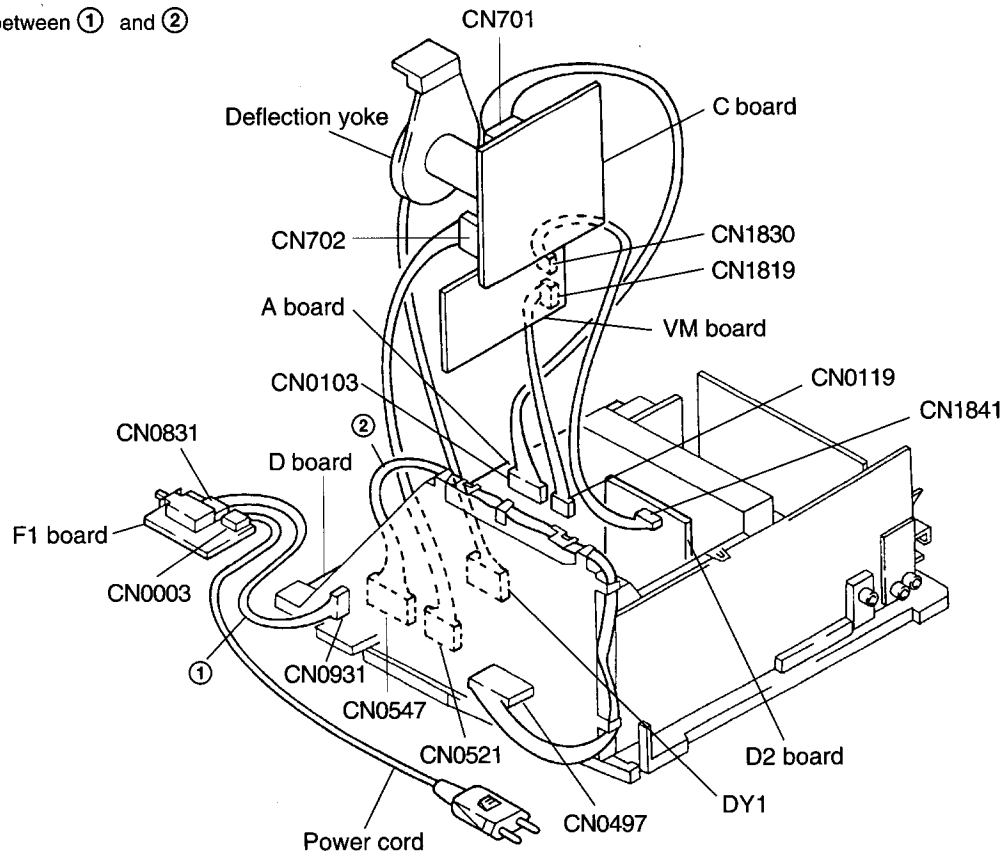

② Pull the claw of the bracket in the direction of the arrow and remove.
① Push the claw in the direction of the arrow and remove.
③ J board

2-7. G AND A2 BOARDS REMOVAL

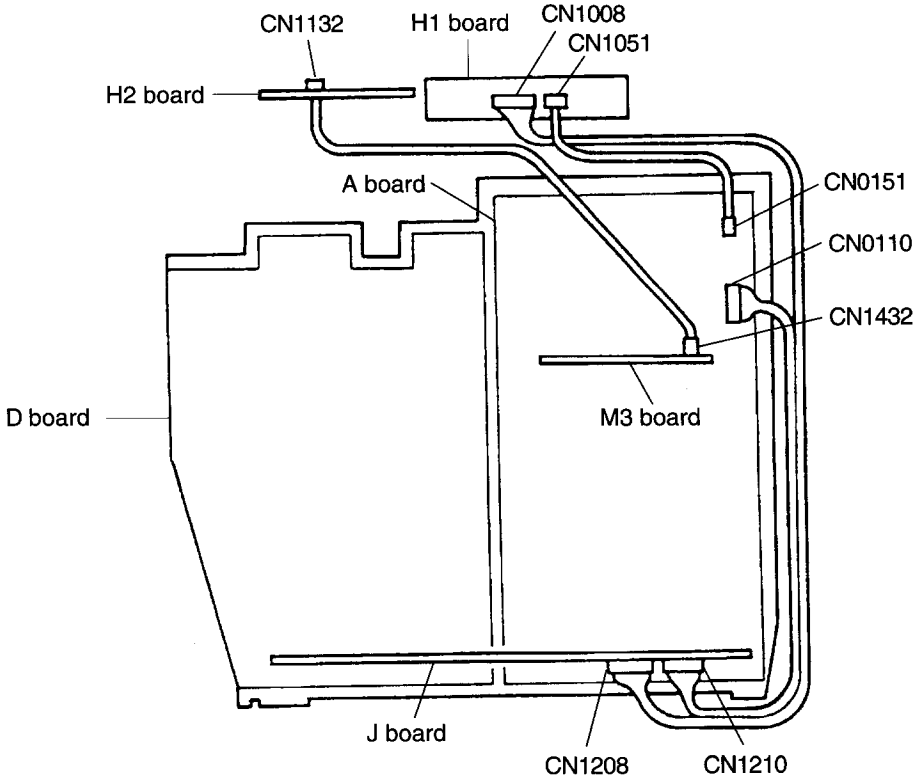


2-8-1. WIRE DRESSING

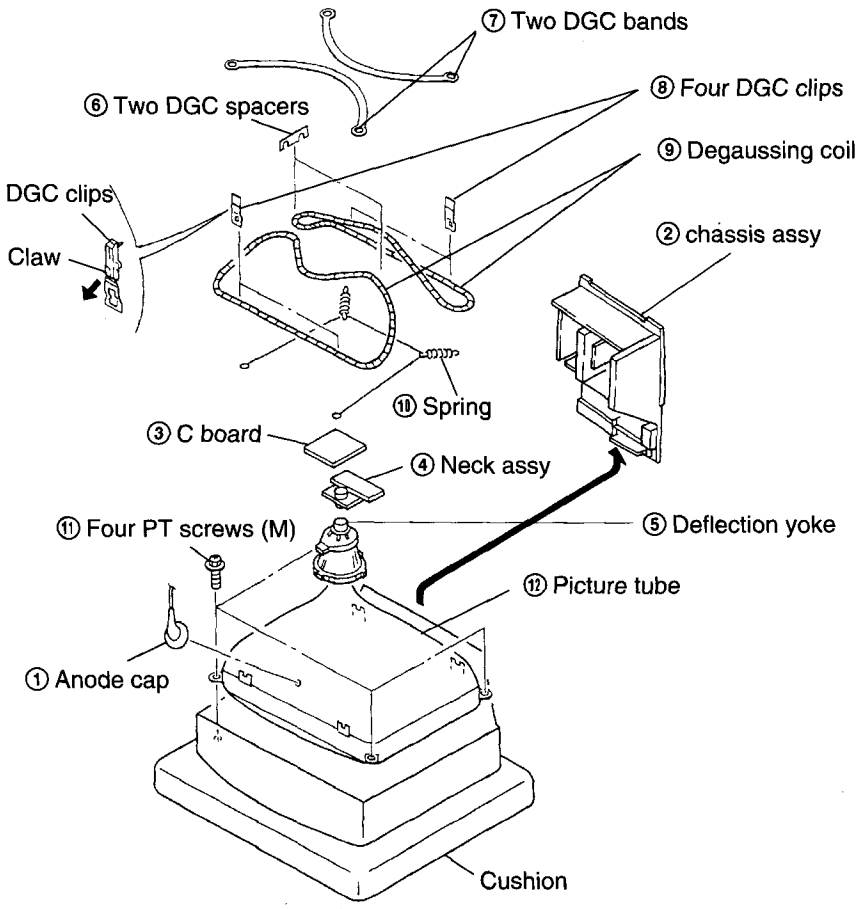
• Keep distance between ① and ②



2-8-2. WIRE DRESSING



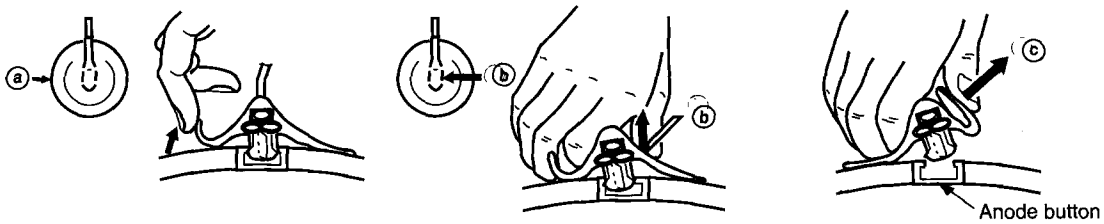
2-9. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

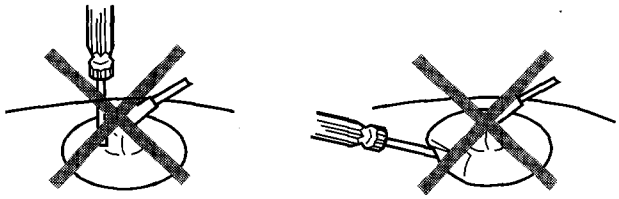
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of the anode-cap with sharp shaped material!

② Don't press the rubber hardly hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.



SECTION 3
SET - UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to these settings :

◑ Contrast 80%
(or remote control normal)
☼ Brightness 50%

- Carry out the following adjustments in this order :

1. Beam landing
2. Convergence
3. Focus
4. White balance

Note: Testing equipment required.
1. Color bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

Preparation:
- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   CONTRAST, BRIGHTNESS } normal
2. Position neck assy as shown in Fig.3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke forward and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side. (See Fig. 3-1 - 3-3)
5. Move the deflection yoke forward and adjust so that the entire screen becomes red. (See Fig. 3-1)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig. 3-4)

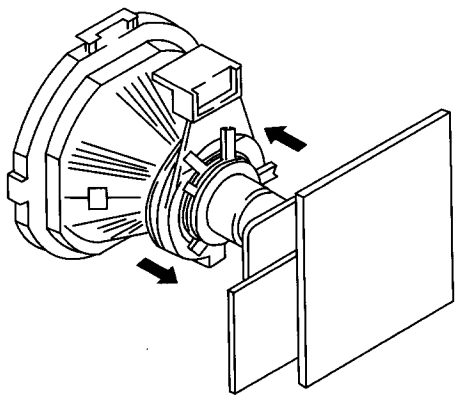


Fig. 3-1

Fig. 3-2

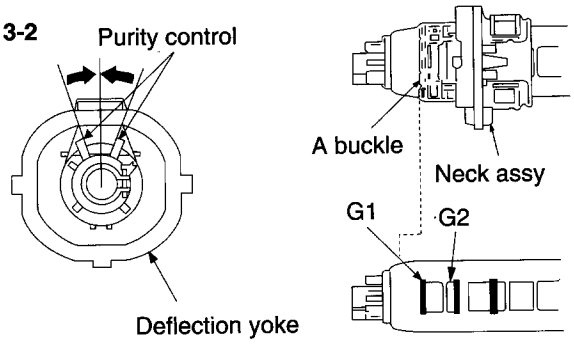
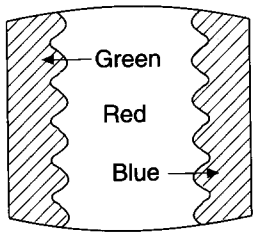


Fig. 3-3



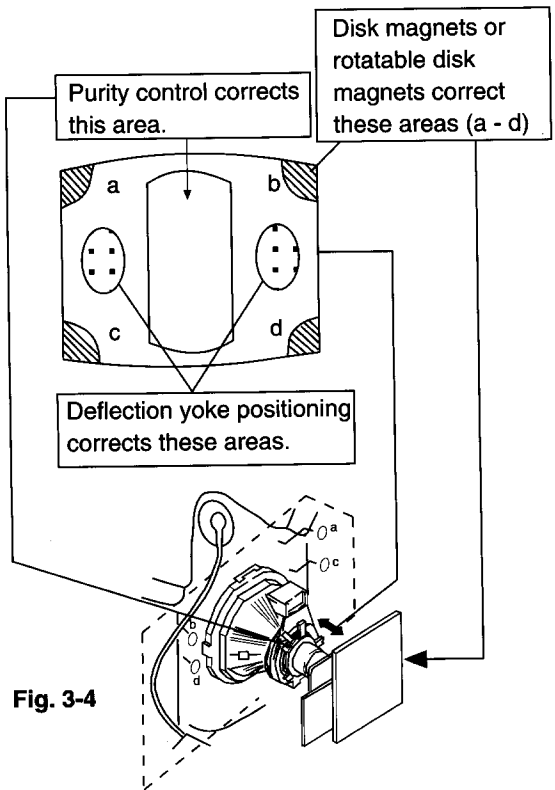


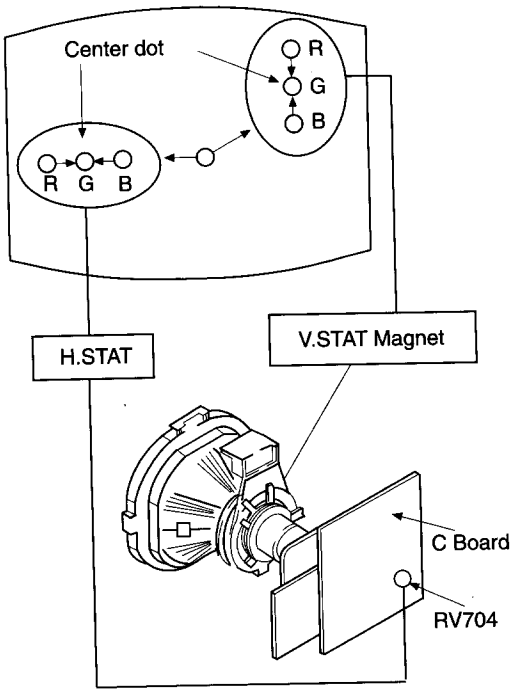
Fig. 3-4

3-2. CONVERGENCE

Preparation:

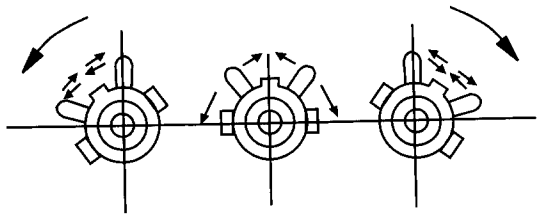
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide a dot pattern.

(1) Horizontal and vertical static convergence

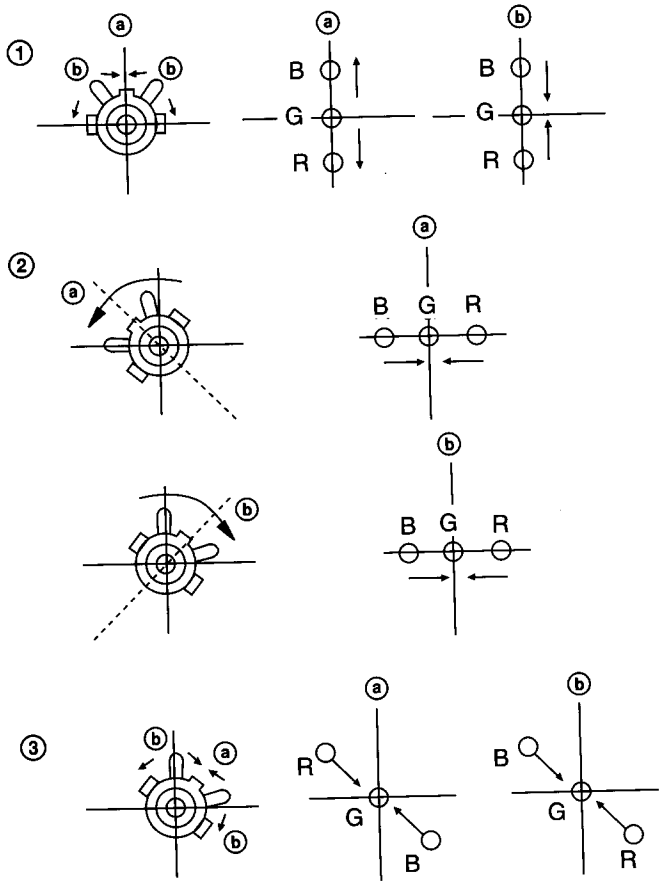


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

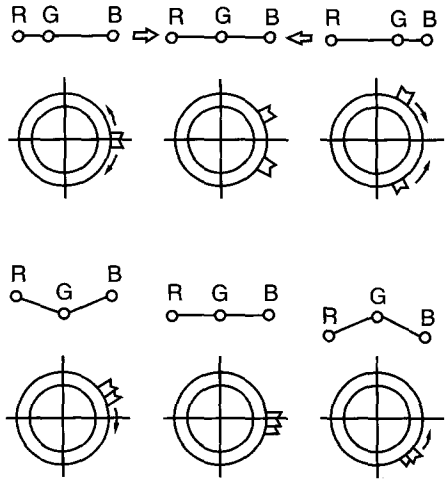
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



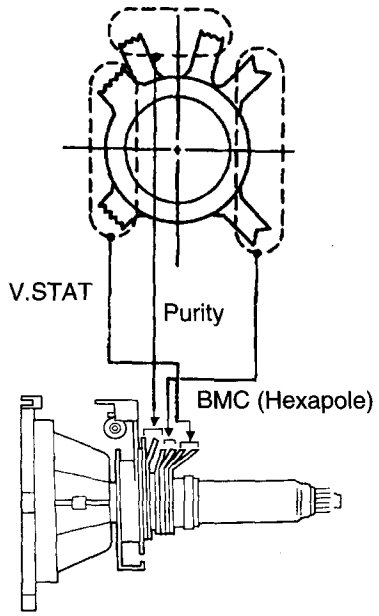
4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

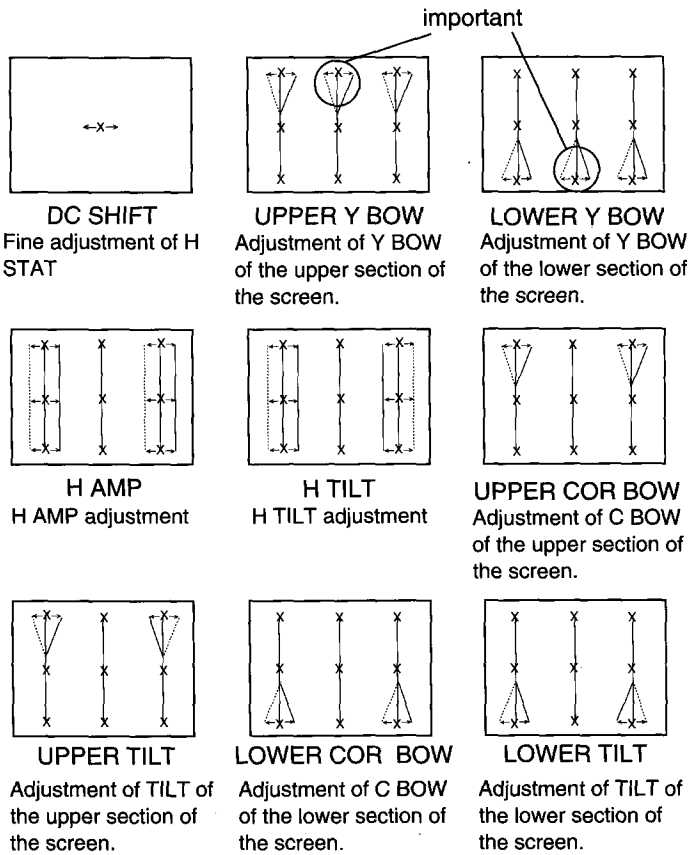


(2) Dynamic Convergence Adjustment

1. Adjust horizontal convergence located at the center position of the screen with H STAT VR.
2. Enter into service mode. (Refer to the section 2 "Electrical Adjustment" on how to enter service mode.)
3. Select CXA1526 on menu.
4. Select each item and adjust them so that each item attains optimal convergence.
5. Press [OK] button to write the data.

CXA1526		
1	DC SHIFT	(32)
2	UPPER Y BOW	(4)
3	LOWER BOW	(5)
4	H AMP	(48)
5	H TILT	(29)
6	UPPER COR BOW	(32)
7	UPPER TILT	
8	LOWER COR BOW	(32)
9	LOWER TILT	(32)

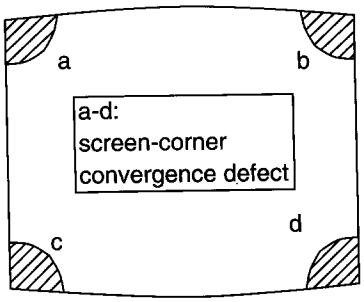
R.G.B. dots movement on the screen of the set

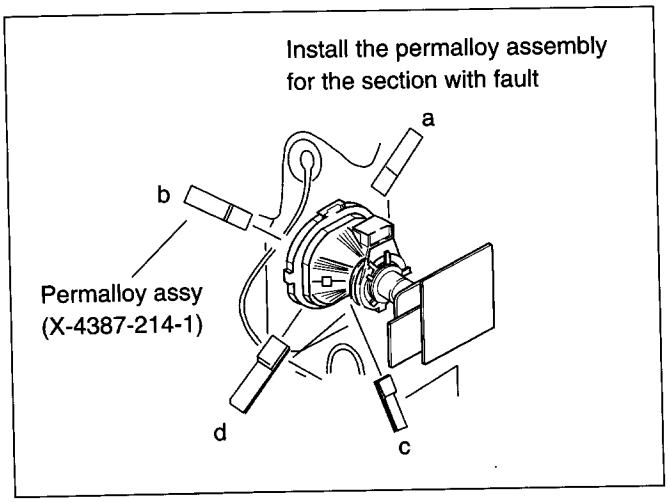

important
DC SHIFT
Fine adjustment of H STAT
UPPER Y BOW
Adjustment of Y BOW of the upper section of the screen.
LOWER Y BOW
Adjustment of Y BOW of the lower section of the screen.
H AMP
H AMP adjustment
H TILT
H TILT adjustment
UPPER COR BOW
Adjustment of C BOW of the upper section of the screen.
UPPER TILT
Adjustment of TILT of the upper section of the screen.
LOWER COR BOW
Adjustment of C BOW of the lower section of the screen.
LOWER TILT
Adjustment of TILT of the lower section of the screen.

At this time, H.TILT, H.AMP, UPPER TILT, UPPER COR, BOW, LOWER TILT, and LOWER COR, BOW look like all the same, but the movement of the right and left dots are reverse in all the TILT system. (Pay attention to the dotted lines.)

(3) Screen corner convergence.

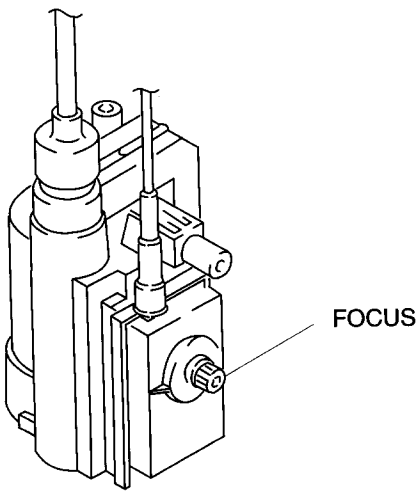
If you are unable to adjust the corner convergence properly, correction is possible by the use of permalloy assemblies.





3-3. Focus

Adjust the focus to optimize the screen.



3-4. WHITE BALANCE

White balance adjustment

1. Receive an all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" on how to enter service mode.)
3. Select TDA4780 on menu.

Item No.	Adjustment item	Data Amount
01	BRIGHT	31
02	COLOR	31
03	PICT	52
04	HUE	31
05	R GAIN	31
06	G GAIN	ADJ.
07	B GAIN	ADJ.
08	R LEVEL REF	ADJ.
09	G LEVEL REF	ADJ.
10	B LEVEL REF	ADJ.
11	PEAK DRV LIMIT	36
12	GAMMA	31
13	SANDCASTLE 2 LEVEL-5	ON
14	DELOF	OFF
15	DATA BUFFER	OFF

Select ▲ ▼ and press OK.

4. Set picture to MAX.
5. Adjust G-DRIVE, B-DRIVE with ▲, ▼ buttons so that the white balance becomes optimum.
6. Press [OK] button to write the data for each item.
7. Set picture to MIN.
8. Adjust R LEVEL REF, G LEVEL REF, and B LEVEL REF with ▲, ▼ buttons so that the white balance becomes optimum.
9. Press [OK] button to write the data for each item.

SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander RM-831.

HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set. Then press the ⏻ button on the remote commander twice.

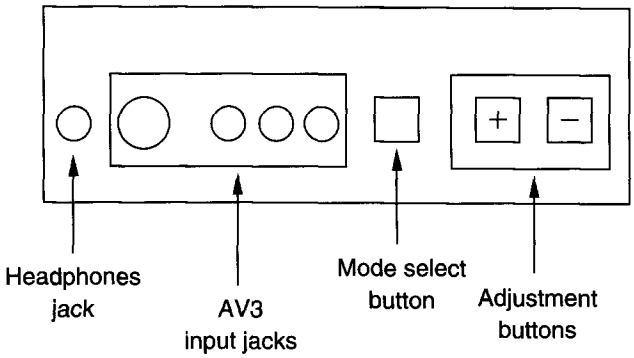


Fig.4-1

2. "TT" will appear at the upper right corner of the screen.

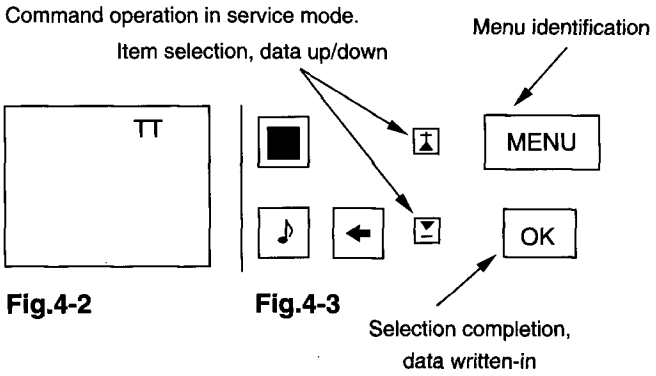


Fig.4-2 **Fig.4-3**

3. Press the MENU button on the remote commander to obtain the menu on the screen.

MAIN MENU
Programme Table
Video Connection
Screen Mode/PIP
Priset/Timer
Picture Control
Sound Control
Language
> DEMO
Select < > and press OK

Fig.4-4

4. Press the ▲ and ▼ buttons on the remote commander and move > to DEMO.
5. Press OK button to proceed to the next menu.
6. The menu of Fig. 4-5 will appear on the screen. Select the DEVICE corresponding to the adjustment item from the table on the next page.

DEVICES
INIT TV
> TDA4686/4780
ECO 3
CXD2018Q
TDA9145
CXA1526
TDA6812
CXA7948a
PiP
Select < > and press OK

Fig 4-5

7. If adjustment item is TDA4780, press the ▼ button and move > to TDA4780.

TDA4780

Item No.	Adjustment item	Data Amount
1	BRIGHT	31
2	COLOR	31
3	PICT	52
4	HUE	31
5	R GAIN	41
6	G GAIN	38
7	B GAIN	31
8	R LEVEL REF	31
9	G LEVEL REF	31
10	B LEVEL REF	31
11	PEAK DRV LIMIT	36
12	GAMMA	31
13	SANDCASTLE 2 LEVEL-5	ON
14	DELOF	OFF
15	DATA BUFFER	OFF

Select ▲▼ and press OK.

8. Press OK button to get the next selection menu.
9. Press ▼ button and move > to the adjustment item and press OK button.
10. Press ▲ and ▼ buttons to change the data in order to comply with each standard.
11. Press OK button to write data.
12. Turn off the power to quit service mode when adjustments are completed.

TDA4780

Item No.	Adjustment item	Data Amount
01	BRIGHT	31
02	COLOR	31
03	PICT	52
04	HUE	31
05	R GAIN	41
06	G GAIN	38
07	B GAIN	31
08	R LEVEL REF	31
09	G LEVEL REF	31
10	B LEVEL REF	31
11	PEAK DRV LIMIT	36
12	GAMMA	31
13	SANDCASTLE 2 LEVEL-5	ON
14	DELOF	OFF
15	DATA BUFFER	OFF
16	NTSC MATRIX	OFF
17	HDTV	OFF
18	FSBL	OFF
19	AUTO CUT OFF	ON
20	FSW 2 DISABLE	OFF
21	FSW 2	OFF
22	FSW 1 DISABLE	OFF
23	FSW 1	OFF
24	ADAPTIVE BLACK	OFF
25	Y HIGH 1V	OFF
26	MOD 2	OFF
27	BLUE STRETCH	OFF
28	VM OUT	ON
29	PEAK DRV ABSOLUTE	ON
30	TIME CNST PEAK LIMIT	OFF
31	No selection	OFF
32	SUB BRIGHT	-5
33	SUB COLOR	0

CXD2018Q

Item No.	Adjustment item	Data Amount
01	V SIZE	ADJ.
02	V SHIFT	ADJ.
03	S CORRECTION	ADJ.
04	V LINEARITY	ADJ.
05	H SIZE	ADJ.
06	PIN AMP	ADJ.
07	TILT	ADJ.
08	UPPER CORNER	ADJ.
09	LOWER CORNER	ADJ.
10	V BOW	ADJ.
11	ANGLE	ADJ.
12	HV COMP. V	13
13	HV COMP. H	8
14	FRAME SHIFT	OFF
15	FREE RUN 60 Hz	OFF
16	SYSTEM 60 Hz	OFF
17	ASPECT WIDE	OFF
18	DOUBLE SCAN	OFF
19	INTERLACE	ON
20	H SHIFT	32

Typical On Screen Display based values when receiving PAL Phillips pattern.

TDA6812	ADJ
Stereo-Separation	(30)

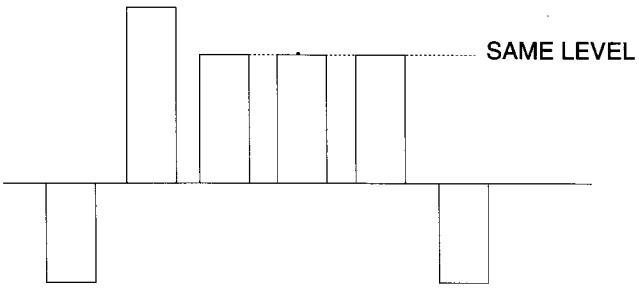
Should be adjusted twice 4 : 3 and 16 : 9 mode.

SUB BRIGHTNESS ADJUSTMENT

1. Input a Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of grey scale and CUT-OFF 20-IRE are only slightly visible on screen.

SUB COLOR ADJUSTMENT

1. Input a PAL color bar signal.
2. Connect an oscilloscope to pin ③ (B) of CN0403 on the C board.
3. Enter into service mode and press 33 of TDA4780, SUB COLOR.
4. Adjust data so that the right sides of the waveform are at the same level.



B-OUT WAVEFORM

STEREO-SEPARATION ADJUSTMENT

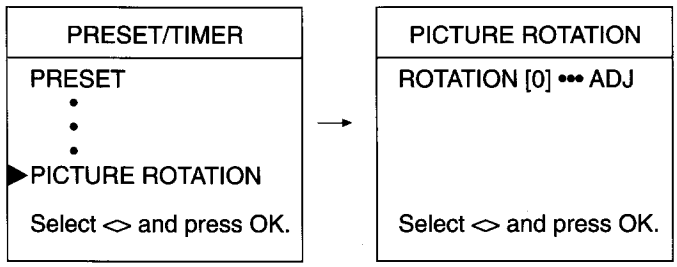
1. Input a 1kHz stereo signal to the L-ch and a 400Hz stereo signal to the R-ch.
2. Enter into service mode.
3. Adjust data so that sound is not detected in the Right-ch and the Left-ch.

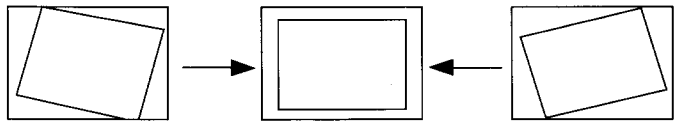
DRIVE AND CUT OFF

See direct test mode list attached and refer to sub brightness or such for adjustment method.

PICTURE ROTATION

1. Input a PAL color bar signal.
2. Enter into service mode.
3. Press the MENU button of the commander to get the menu on screen.
4. Press the ▲ and ▼ buttons on the commander and move > to PRESET/TIMER.



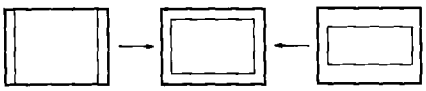


DEFLECTION SYSTEM ADJUSTMENT

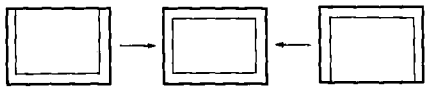
1. Enter into service mode and select CXD2018Q.
2. Select and adjust each item in order to obtain the optimum image.

Item No.	Adjustment item	Data Amount
01	V SIZE	ADJ.
02	V SHIFT	ADJ.
03	S CORRECTION	ADJ.
04	V LINEARITY	ADJ.
05	H SIZE	ADJ.
06	PIN AMP	ADJ.
07	TILT	ADJ.
08	UPPER CORNER	ADJ.
09	LOWER CORNER	ADJ.
10	V BOW	ADJ.
11	ANGLE	ADJ.
12	HV COMP.V	13
13	HV COPM.H	8
14	FRAME SHIFT	OFF
15	FREE RUN 60 Hz	OFF
16	SYSTEM 60Hz	OFF
17	ASPECT WIDE	OFF
18	DOUBLE SCAN	OFF
19	INTERLACE	ON
20	H SHIFT	32
21	PICTURE ROTATION	ADJ.

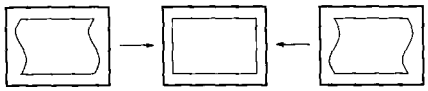
V SIZE



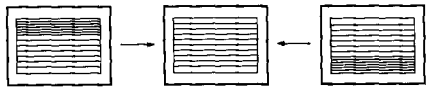
V SHIFT



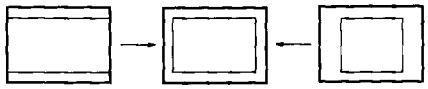
S CORRECTION



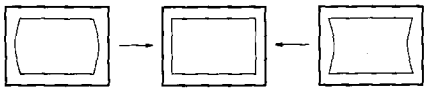
V LINEARITY



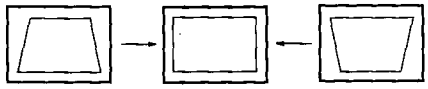
H SIZE



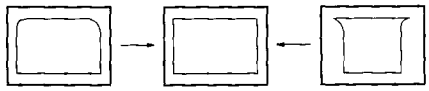
PIN AMP



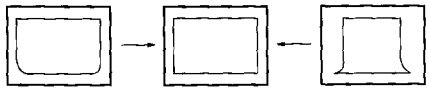
TILT



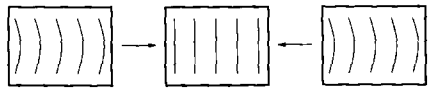
UPPER CORNER



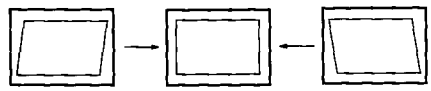
LOWER CORNER



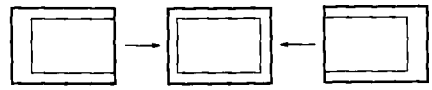
V BOW



ANGLE



H SHIFT

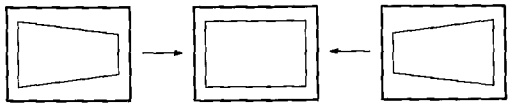


3. Press [OK] button to write data.

If the menu display prevents accurate adjustment, press ⨯ to clear, to resume, press ⨯ once again.

DEFLECTION SYSTEM ADJUSTMENT

(Adjust RV1501)



BELL FILTER ADJUSTMENT L3, L2

1. Input a Phillips signal.
2. Connect an oscilloscope to pin ⑮ of IC1 on the E2 board.
3. Adjust L3 (Bell Filter) to obtain a flat chroma/smooth signal see (Fig 4-6).
4. Connect an oscilloscope to pin ② of IC1 on the E2 board.
5. Adjust L2 (B-Y) to obtain symmetrical transient between (R-Y) → (B-Y) and (B-Y) → (R-Y) see (Fig 4-7).
6. Connect oscilloscope to pin ⑤ of CN2.
7. Confirm ID flip-flop output signal is as indicated in (Fig 4-8).

Fig. 4-6 < MONITOR PIN ⑮ of IC1 Connect

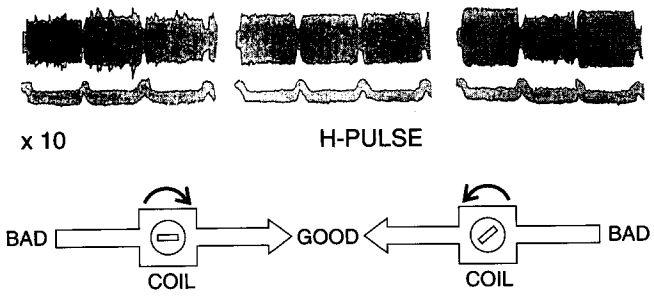
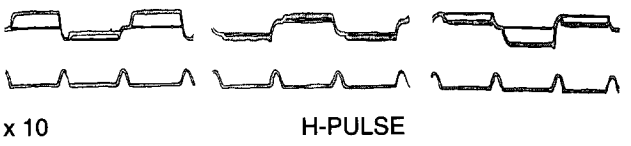


Fig. 4-7 < MONITOR PIN ② of IC1 Connect



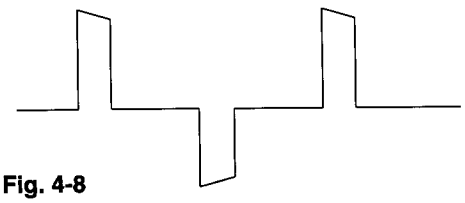
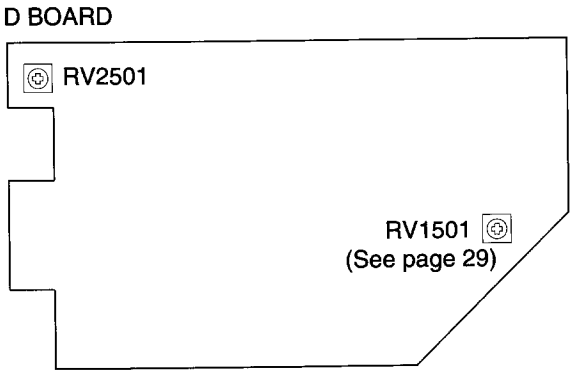


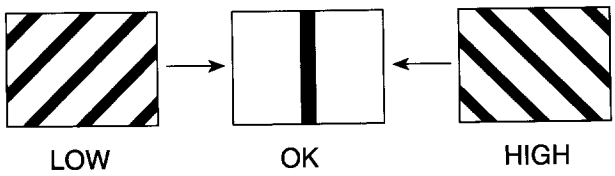
Fig. 4-8

4-2. VOLUME ELECTRICAL ADJUSTMENTS

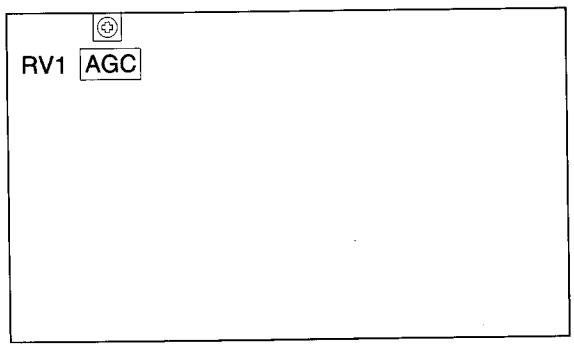
H-FREQ ADJUSTMENT (RV2501)



1. Input a Phillips pattern.
2. Add a 100µF 16V capacitor in parallel with R2503, to make a free running condition.
3. Adjust RV2501 to obtain frequency of 31.25Hz ± 50Hz.



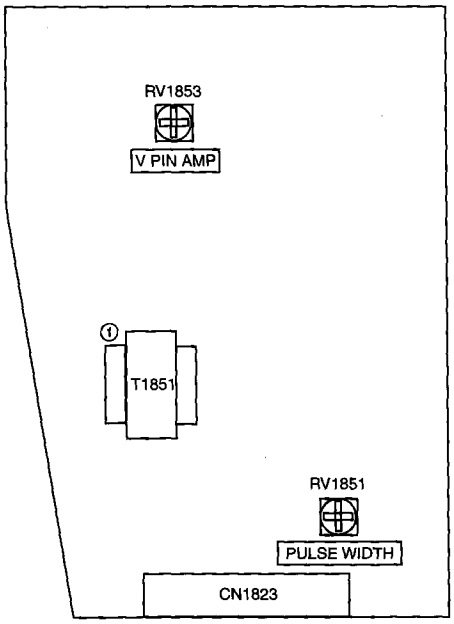
AGC ADJUSTMENT (IF BLOCK)



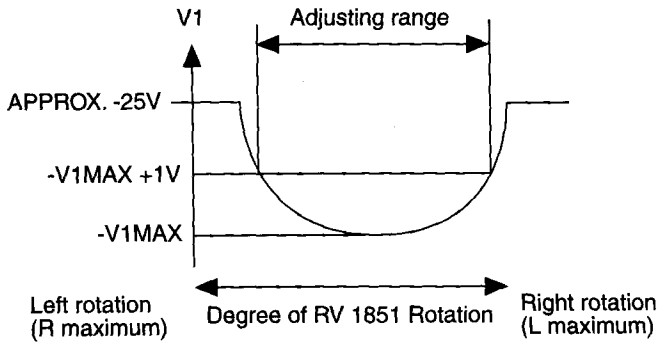
1. Receive an off-air signal.
2. Adjust the AGC RV1 so that there is no snow noise or cross-modulation visible on the screen.
3. Change the receiving channel and confirm status.

PULSE WIDHT & V-PIN ADJUSTMENTS (RV 1851/1853)

D2 BOARD

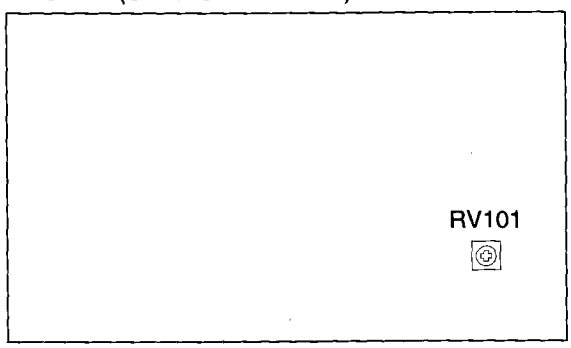


1. Connect an oscilloscope to pin ② of T1851.
2. Preset RV-1853 to center of its range (mechanical center).
3. Adjust RV-1851 to obtain minimum amplitude.
4. Switch the oscilloscope input to D.C. and adjust RV-1853 to obtain -33.2 ± 0.5V.



DET OUT ADJUSTMENT (RV101)

A BOARD (COMPONENT SIDE)



1. Input a Phillips pattern
2. Adjust RV101 so that 1.0Vp-p can be obtained at pin ⑤ of CN0109 on the (A BOARD).

4-3. TEST MODE 2 :

Is available by pressing Test button twice, OSD 'TT' appears. The functions described below are available by pressing the two numbers. To release the Test Mode 2, press 0, 10, or 20 twice ... or switch the TV into Stand-by Mode.
Pressing the two local controls (+ and -) during Power ON will also switch into "TT" mode.

In TT mode, it is possible to remove the menu from the screen by pressing the Speaker OFF button. By pressing the Speaker OFF button a second time the menu will reappear. The function is kept even when the menu is not displayed !!.

00	Switch TV back into normal mode - TT mode off
01	Direct access to Picture maximum
02	Direct access to Picture minimum
03	Set the Volume to 35% (Production request)
04	Set the Volume to 50% (Production request)
05	Set the Volume to 65% (Production request)
06	Set the Volume to 80% (Production request)
07	No function
08	Shipping Condition (Production request) To ensure that all TV sets leave the Production facility with the same presettings. Programme 1 is selected, AV IN is set to AV1, AV OUT is set to TV Out, Volume and HP volume is set to 35%. Resolution is set to high, Format is set to 4:3, Pip is set to Top Left position, Pip is switched off, TT mode is switched off, all analogue values are set to the reset setting (factory setting).
09	Language reset (Production request) With this function the "Language Byte" in the NVM (Bank 0AAH Address 0DCH) is erased (set to 0FFH). The Lanuguage Menu appears now automatically when the TV set is switched ON, as long as no new language is selected.
10	The TT number will be deleted. All numbers with 0 (10, 20, 30, 40) will reset the TT number. A new number can be selected. TT display is kept.
11	Direct access to Balance (Production request) With Cursor Up/Down the Balance can be controlled (w/o OSD, Menu display).
12	Direct access to Hue (Production request) With Cursor Up/Down the Balance can be controlled (w/o OSD, Menu display).
13	Display of Software Version and TV set configuration.
14	Adjustment of N/S Correction

15	Read factory setting from ROM (Programme Code) and store this data at Last Power Memory data location. (The previous last power memory data is overwritten.) (For Service) AE-2F has 3 pages of Analogue data : 1. Last Power Memory data. This data is sent continuously to the corresponding IC's (TDA9145, TDA6812) with this data the TV picture/sound appears. 2. Reset data. By pressing "Reset" in menu this data is transfered from Reset Data location to the Last Power data location in NVM. That means the previous Last Power Memory Data is overwritten by the Reset data. Last Power memory and Reset data are now the same . 3. Factory fixed data. The ROM code of the micro processor contains analogue data which is unable to be changed.
16	Save actual Last Power Memory data at Reset Data location (the previous Reset data is overwritten) (For Service)
15/16	With these two functions , it is possible to preset user defined Reset values (just TT 16) or to preset factory defined Reset values (first TT 15 then TT 16).
17	This function presets the Labels for the AV sources: The Labels are AV1, RGB, AV2, YC2, AV3, VC3, AV4, VC4. (Production request)
18	Text possible On/Off selection of Text (toggle function)
19	Direct access to Stereo Separation. With Cursor Up/Down command the Separation can be adjusted. (no need to select the menu)

See TT 10 In the case of TT functions which give the possiblibity of "Direct access", the adjustment can be done with Cursor Up/Down commands. After releasing the selected TT function by TT 00 or other TT number the adjusted value is stored automatically.
No function
No function
No function
No function
No function
Text Character Set selection Char set 06 -> West Europe (see 9.24 Text Character Set)
Text Character Set selection Char set 38 -> East Europe (see 9.24 Text Character Set)
Text Character Set selection Char set 40 -> West Europe , US English (see 9.24 Text Character Set)
Text Character Set selection Char set 55 -> West Europe , Turkish (see 9.24 Text Character Set)
See TT 10
Direct access to Red Gain [TDA4780]
Direct access to Green Gain [TDA4780]
Direct access to Blue Gain [TDA4780]
Reserved for TDA4780 Red Level Ref
Reserved for TDA4780 Green Level Ref
Reserved for TDA4780 Blue Level Ref
Direct access to Peak Drive Limit [TDA4780]
Direct access to Gamma Level [TDA4780]
No function
See TT 10
TDA4780 is set to default data (almost Center positions)
TDA4780 is set to default data (almost Center positions)
TDA4780 is set to default data (almost Center positions)
EC02 is set to default data
Set NVM to Protect mode (Bank 0AEH Adr. 0FFH write with 0)

46	IR Channel Pressetting Mode The channel pressetting can be done by a Special IR Transmitter. Sequence: TT46 -> --PR Number select display appears Select Prog. No. from where the channels shall be stored. -> Now TV is waiting for IR sequence. <-- -> If no IR transmission starts TT46 is released after 20 sec. <-- ! NOTE: When TT46 is active, any IR transmission will be interpreted as PROG Data!
47	Adjustment of MPIP MultiPIP horizontal position
48	Adjustment of MPIP MultiPIP vertical position After using TT49 a compliter new adjustment is necessary!!
49	The EEPROM Testybyte is erased. After Power OFF -> ON the complete EEPROM data (exept channel tables) are overwritten. EEPROM Protection Byte is set to 0 - protection mode.

Note :
For No. 35/36/37/38 special pressing (AKB, forced Color Mode, Trap) is selected.
After selecting a new Test Mode Number, the AKB is switched ON, the Trap is switched On and TDA9145 is switched to Auto Search Mode.

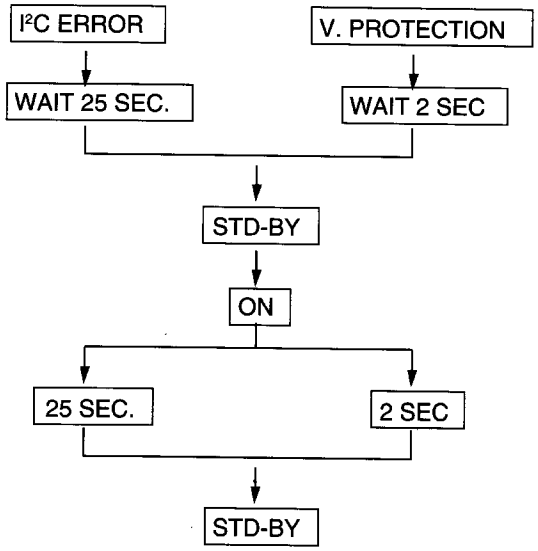
Note :
Functions TT 41/42/43/44 are only available when PR 99 is selected, to avoid inadvertent usage. These functions overwrite the complete data package for the selected IC in the EEPROM. After using one of these functions a complete new adjustment of the selected IC is necessary .

In Test Mode 2 the Menu display is switchable by the Speaker-Off button.

4-4. ERROR MESSAGE

Self diagnostic system operates as follows.

- When the microprocessor is unable to receive an acknowledgement back from the device, the LED starts flashing according to the table below.



In the case of more than one error in parallel, the blinking error shows max priority according to the error number (e.g. error 2 and error 5 appear together, then LED,s show error 2).

ERROR TABLE

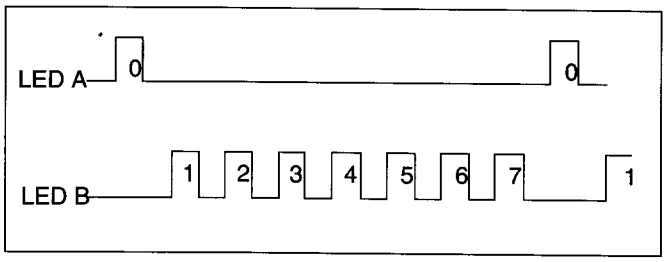
ERROR COUNT	IC TYPE	FUNCTION
1	II C BUS	SDA low
2	NVM	EEPROM
3	SDA3202	Tuner PII
4	TDA9145	Colour decoder
5	TDA4870	RGB/Jungle
6	TDA6812	Sound processor
7	CXD2018Q	V deflection
8	CXA1855S	AV switch
11	SDA5273P	Text
13		V protection

Stand By LED blinking — No 1K return

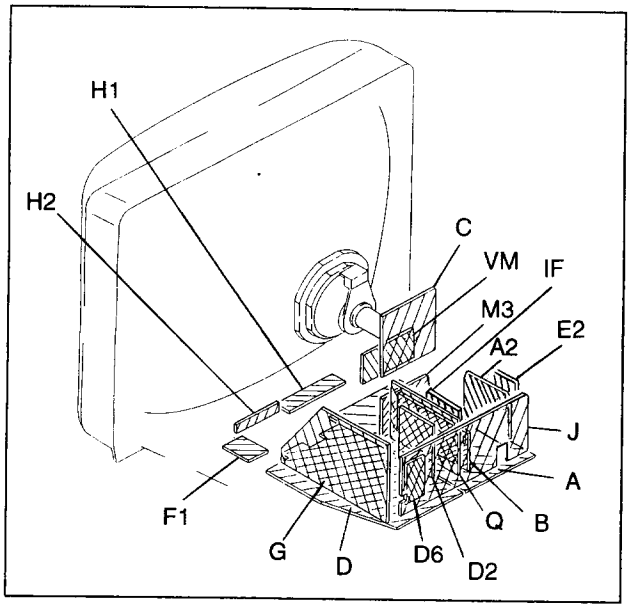
4-5. ERROR I²C BUS DIAGNOSTIC SYSTEM FOR AE-2F CHASSIS.

For all IC's used in the AE-2F chassis which are necessary to obtain picture and sound there is an inbuilt I^2C Bus diagnostic system.

In the case of no acknowledge bit, LED A and LED B start blinking as shown.



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted.
  pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4W

- Chips resistors are 1/10W.
- All resistors are in ohms.
  kΩ=1000Ω, MΩ=1000KΩ
- : nonflammable resistor.
- : fusible resistor.
- △: internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground. (cool)
- : earth-chassis. (hot)
- # mark is no mount.
- All voltages are in V.
- Voltage are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a PALcolour-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references.
- : B+ line.
- : B– line.
- : signal path.

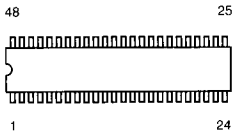
Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note:
Components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

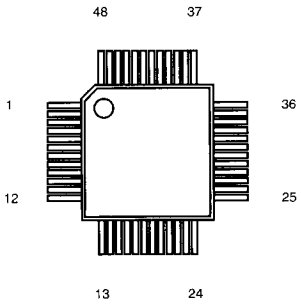
-4. SEMICONDUCTORS

CXA1855S

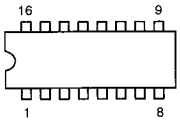


(TOP VIEW)

CXD2018Q

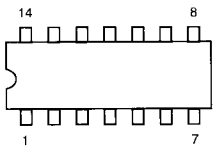


HEF4046BT
MC14046BD
MC14053BCP
MC33025P
MC74HC4053N
SN74LS221N
YM7128
µPC4053BC



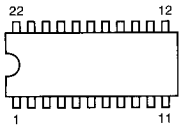
(TOP VIEW)

IR2112



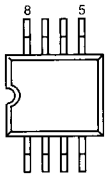
(TOP VIEW)

LA7856A



(TOP VIEW)

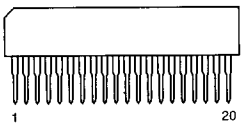
LM358D



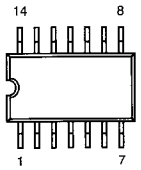
(TOP VIEW)

LM78L05ACZ
LM7812CT
L78L08ACZ-AP
MCT7809CT
NJM78M09FA
NJM78M12FA

MB81C4256A-70PSZG

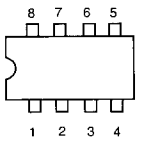


MC74F08DR2

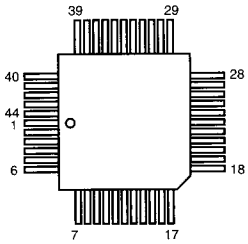


(TOP VIEW)

BA4558
CXD2024Q
LM393P
M5216P
ST24C16CB1
TDA2822M
TEA2114
µPC393C
µPC4558C

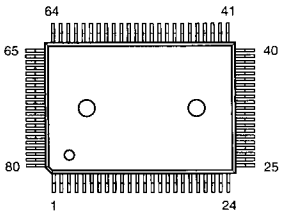


P83C652FBA-V3/AB517
SAA4951WP/V1



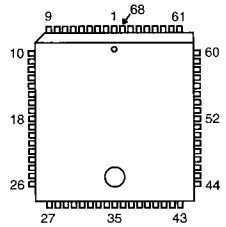
(TOP VIEW)

SAA4940H



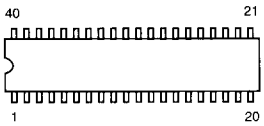
(MARKING SIDE VIEW)

SAA7158WP
SDA5273P-C22-GEG



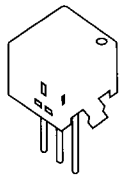
(TOP VIEW)

SAA7282-ZP

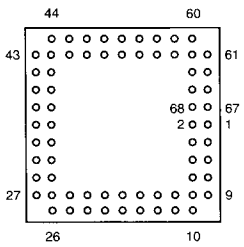


(TOP VIEW)

SBX1610-11
SBX1810-11

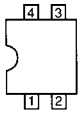


SDA30C163-2GEG



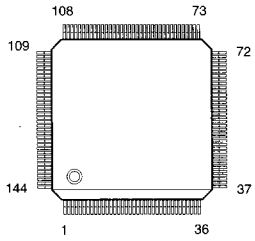
(BOTTOM VIEW)

SFH617G-1



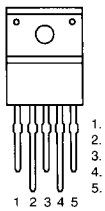
1. VCC
2. NC
3. Vout
4. GND

SI-3050CA



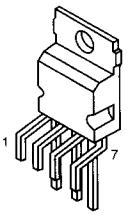
(TOP VIEW)

SI-3120CA

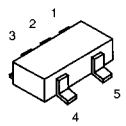


1. GND
2. Vo (ON/OFF)
3. Vo
4. Vo SENSE
5. Vin

STV9379
TDA2052



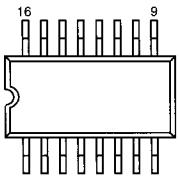
TC4S66F



TDA2579B

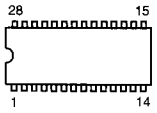
(TOP VIEW)

TDA4665T



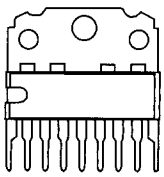
(TOP VIEW)

TDA4650/V4
TDA4780

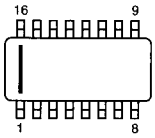


(TOP VIEW)

TDA6111Q

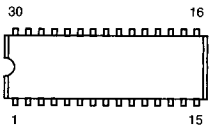


TDA6812-5



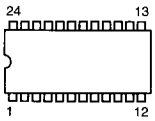
(TOP VIEW)

TDA7317



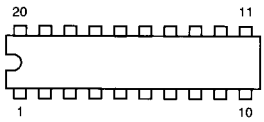
(TOP VIEW)

TDA8443B
TDA9145/N2B



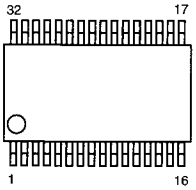
(TOP VIEW)

TDA8732



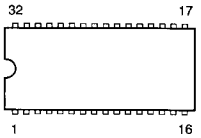
(TOP VIEW)

TDA8755



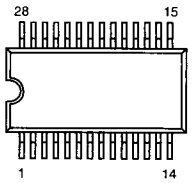
(TOP VIEW)

TDA9160A



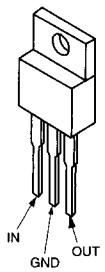
(TOP VIEW)

TDA9187-2XGEG
TDA9188-3XPGEG

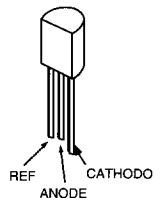


(TOP VIEW)

TEA7605



TL431CLP



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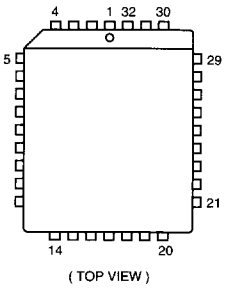

(TOP VIEW)

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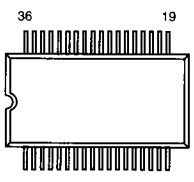

(TOP VIEW)

BF199
JC501
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2SB1186A
2SC2551-O
2SD788-5

BF550
DTA114EK
DTA114TK
DTA144EK
DTA144TK
DTC114EK
DTC124EK
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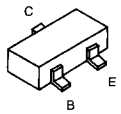
2SA1162-G
2SC1623-L5L6
2SC2412K
2SC2413K
2SD1781K



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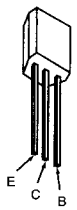
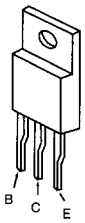


IRF610
IRF614



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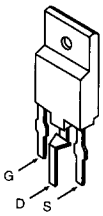

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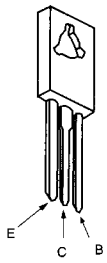

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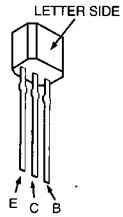

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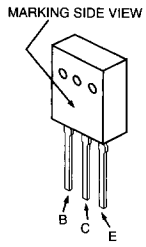

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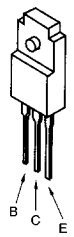

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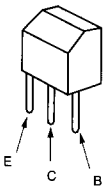

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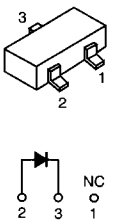
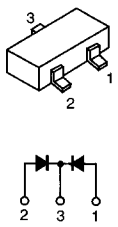
MA3056H
MA3056M
RD5.6M-B2



DAN202K



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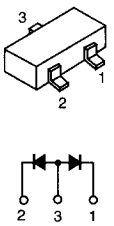

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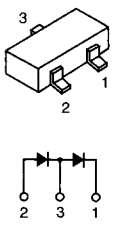

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MTZJ-5.1B
MTZJ-5.6B
MTZJ-7.5A
MTZJ-9.1
MTZJ-9.1A
MTZJ-13B
MTZJ-15B
MTZJ-18B
MTZJ-33C
MTZJ-36B
MTZJ-39C
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RD5.6ESB2
RD7.5ESB2
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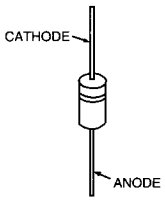
RD18ESB2
1SS119
1SS133



D1N20R
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EGP10G
EGP20G
RGP02
EL1Z
GP08D
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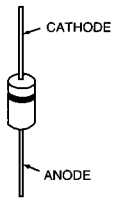

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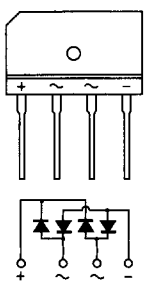
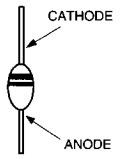
RBA-404B
RBA-406B



ERC38-06



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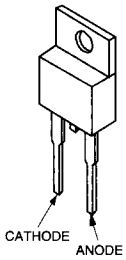
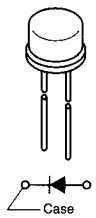


ESAC39M-06C



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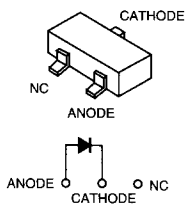
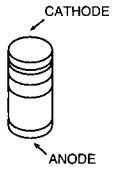


MA3051L



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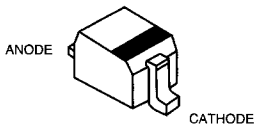
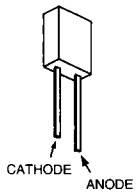
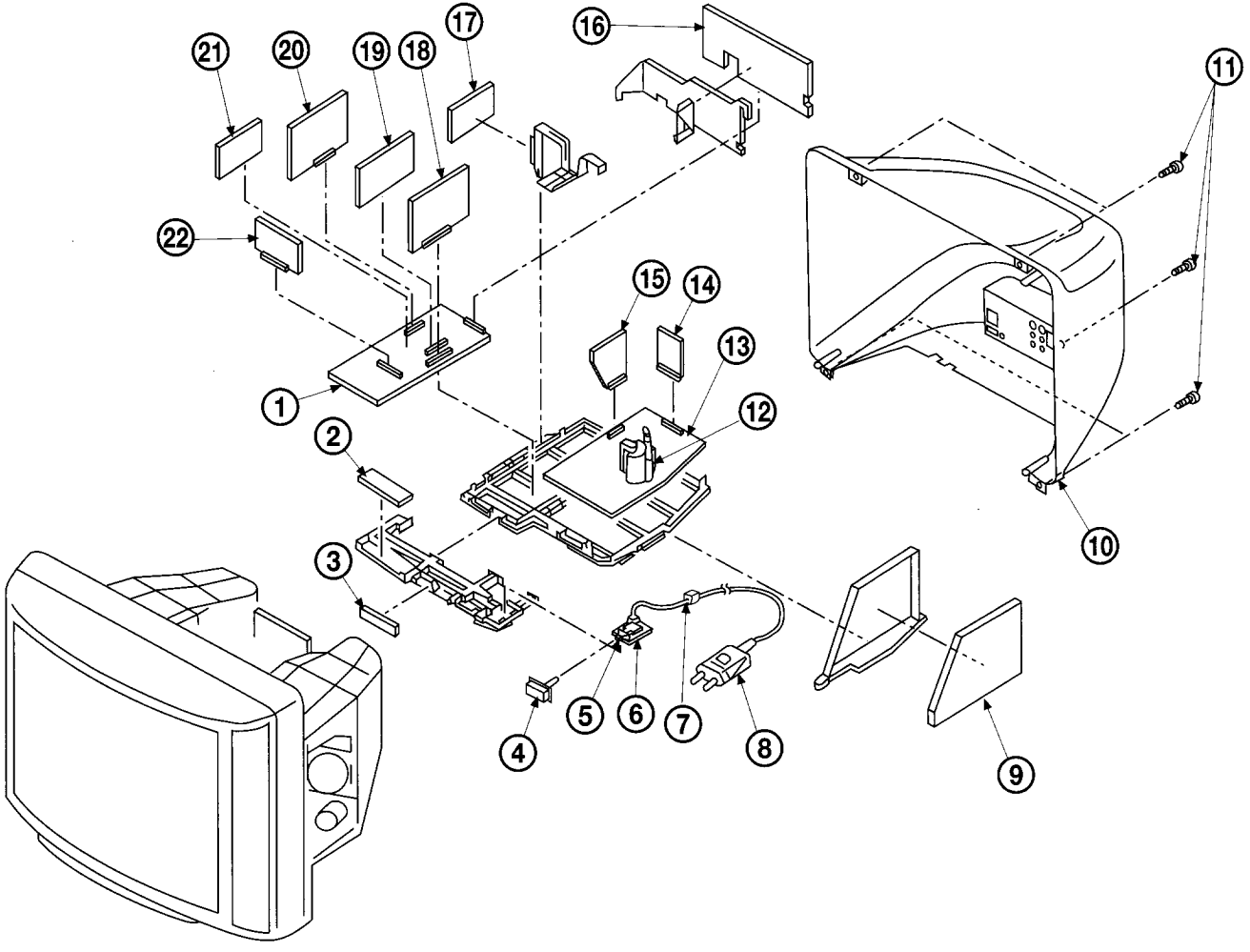
1SV217



LD-201VR



6-1. CHASSIS



6-2. PICTURE TUBE